FLASHES AND PLUGS

CRISIS MET. A California shipyard worker and father of six boys and a newborn daughter, returned home recently to find his household in a dither.

It was time for the early morning feeding of his baby daughter, but her only bottle had been broken.

The harassed father telephoned a local police sergeant, who recalled that one of the men on the force also had a small baby and an ample supply of feeding bottles.

With red lights flashing, a squad car was dispatched—and the feeding schedule was met without interruption.

• • •

TALK IN TOKYO. The city governor of Tokyo, who faced an official telephone bill of about $840,000 last year, has ordered his staff to stop using office telephones for personal calls.

Nearly all calls made by the staff were of a private nature, he decided after an inquiry.

• • •

SAFE AGAIN. When safecrackers couldn't open the strong box at a New York City dairy recently they stole an auto and hauled it away.

A few minutes later police received a telephone call from a woman who wanted to report a reckless driver who nearly ran her down and didn't bother to stop when he hit a bump and an unopened safe fell out of the car's trunk.

• • •

WHO DAT MAN? A Zanesville, O., reporter telephoned the home of the police chief one evening. "Hello," answered a tiny voice.

"Hello," replied the reporter, "may I speak to Mr. Hodgson please?"

After a moment's pause the tiny one at the other end of the line turned from the telephone and called out loudly: "Mommy, who's Mr. Hodgson?"

• • •

MUGS CALLING. Mugs, a nine-week-old Boxer pup, barked his way out of a locked workshop in Ontario, Canada, by telephone, recently.

A pet at an electric company, Mugs had been locked in the shop overnight. In his barking and scuffling to get out, he knocked the telephone receiver off the hook, and brought his plight to the attention of the operator, who hearing the barking and whining, feared an emergency. She called police who arrived and freed the "calling party."

CIRCULATION

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

October 9, 1954

Contents

IN THE NATION'S CAPITAL 17
By Francis X. Welch

AUTOMATIC PBX LINE ASSIGNMENTS 19
By Gilbert R. Brackett

THE OPERATOR'S CORNER 23
By Mayme Workman

THE PLANT MAN'S NOTEBOOK 26
By Ray Blain

PLANT MAN'S QUIZ 27
By Ray Blain

EDNA AND CAROL WERE TOUGH "GALS" 28

INDEPENDENT OPERATOR STARS IN URUGUAYAN FESTIVAL 34

MAINTENANCE TESTING EQUIPMENT—
Part 73 41
By John A. Bracken

COURTS AND COMMISSIONS 46

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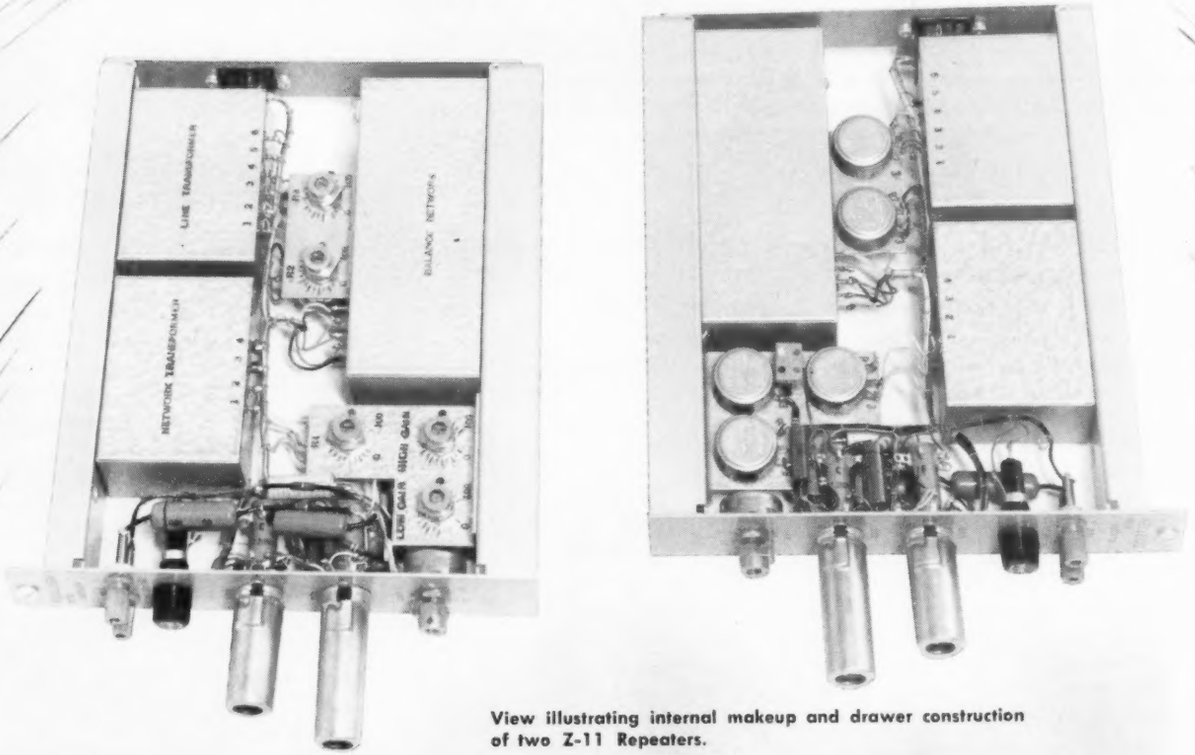
Front view of four Z-11 Repeaters. Vertical mounting space required for two complete Repeaters only 1¾". Total for four Repeaters as shown — 3½".



View illustrating internal makeup and drawer construction of two Z-11 Repeaters.

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★ ★ ★ IN THE ★ ★ ★ NATION'S CAPITAL

by FRANCIS X. WELCH WASHINGTON EDITOR

McConnaughey first full-fledged FCC chairman for some time . . . character of FCC membership changing. More on court decision in Massachusetts rate case of New England Telephone & Telegraph Co. Eisenhower praises past year REA record.

FROM the summer White House in Denver, President Eisenhower made it official about George C. McConnaughey becoming the first full-fledged chairman of the Federal Communications Commission in quite awhile. As chairman, he takes over the duties exercised by Commissioner Rosel H. Hyde, who has been acting chairman since last April when his own one-year designation as chairman expired.

McConnaughey, whose actual nomination to the FCC was anticipated by a few days in the last issue of this department, is a replacement for the vacancy left on the FCC by the recent resignation of George E. Sterling, for reasons of health. Filling Sterling's unexpired term, McConnaughey will serve until June, 1957, unless denied confirmation by the Senate. This is hardly likely because of McConnaughey's good connections, not only with the White House (where his work as head of the Defense Contracts Renegotiation Board has brought satisfaction and respect for his ability), but also with the Senate, where his good friend Sen. John W. Bricker (R., O.) is chairman of the Interstate Commerce Committee. The Senate Interstate Commerce Committee handles FCC nominations, so it is not likely there will be any hitch or delay in Senate confirmation of McConnaughey's interim appointment.

This would be true even if the confirmation had to lay over until the next session when there is a possibility that the Democrats will be organizing the Senate (giving the Senate Interstate Commerce Committee a different chairman). There is a chance, however, that McConnaughey will be confirmed, before that time, by the present Senate when it returns right after the election to act on the special committee report to censure Senator McCarthy (R., Wis.).

McConnaughey's background is that of a lawyer who has devoted a large part of his career to public service, chiefly in his native state of Ohio. He was born in Hillsboro, O., on June 9, 1896. He served in World War I as a first lieutenant in the Army and was awarded medals for military engagements. He was educated at Denison University, Granville, O., (Ph.B., 1918) and received his law degree from Western Reserve University at Cleveland (LL.B., 1923).

Following his admission to the Ohio bar in 1924, he practiced law for two years before going to work for the city of Cleveland. In 1926 he became assistant director of law for the city. He went back into private practice of corporation law in 1928. He returned to public service by appointment as chairman of the Ohio Public Utilities Commission in 1939 and remained until 1945. During this period he also became active in the affairs of the National Association of Railroad & Utilities Commissioners, becoming president of that organization from 1944 to 1945. While still serving as chairman of the Ohio commission, McConnaughey also did some extra duty during World War II years as chairman of the Ohio War Transportation Board from 1942 to 1946.

With the coming of the Republican administration to Washington in 1953 McConnaughey was tapped by President Eisenhower to head the Defense Contracts Renegotiation Board. Before coming to Washington he made his home in Columbus, O. He married Nelle Louise Morse in 1924 and has two children: George Carlton, Jr., and David Croft. The White House has let it be known that McConnaughey will serve as chairman for one year, after which the chairmanship will "rotate" among the various members on an annual basis—a practice which has been followed in the Interstate Commerce Commission and may be installed in some other regulatory commissions.

Changing Character of the FCC

The advent of naming McConnaughey chairman of the FCC is significant in two respects. First, it bears out a fairly well-established pattern which your correspondent noted over a year ago when President Eisenhower first began to make appointments to the federal regulatory commissions. That was the President's tendency to look to the state regulatory commissions for replacement of commission vacancies formerly occupied by "holdover" appointees of former administrations. In other words, the President is utilizing the state regulatory commissions as a training school for federal commissioners.

This is not quite the same as making "career" appointments—in which case Eisenhower would start making his nominations from the staff of the federal commissions already on the job. But with the first Republican administration in 20 years, the President found the staffs of these federal commissions pretty well loaded with appointees of previous administrations. And as a matter of practical politics and to get assurance of more immediate cooperation from appointees of his own choosing, the President evidently decided to bring state commissioners to Washington rather than utilize regulatory people already in Washington for some years.

While this was at first only a theoretical observation of this writer, the fact remains that the President has appointed seven state commissioners to fill vacancies on the three federal regulatory commissions since he came to office. Besides McConnaughey, the other six are: Federal Power Commission (FPC) Chairman Kuykendall of Washington State, Commissioner Digby (FPC) of Louisiana, Stueck (FPC) of Missouri, Doerfer (FCC) of Wiscon-

sin and Clarke (Interstate Commerce Commission) of Washington State.

This resort to state regulatory background is also in keeping with the President's philosophy of avoiding over-emphasis of centralized federal controls. He does this by placing stress on the local or state point of view as applied to federal commissioners. The importation of state commissions is likely to have the effect of infusing the local or grass-root viewpoint into boards and commissions which might otherwise have a tendency to become isolated in the Washington vacuum.

The other significant factor about McConnaughey's appointment to the FCC is the change which seems to be coming over the commission itself. Originally the FCC was set up in 1934 to succeed the old Federal Radio Commission. Although its jurisdiction was expanded to include telephone and telegraph, the technical job of setting up a regulatory control for radio, and later television, occupied by far the greater part of the commission's attention. This was understandable. The telephone and telegraph companies had been regulated by the states for decades. The FCC's jurisdiction as to them was simply more of the same—just another regulatory layer superimposed at the national level.

But radio regulation was, at that time, something new, and something very technical. The whole spectrum had to be allocated between the long and short-wave and the various special uses, such as aviation and public agencies. The coming of frequency modulation and the more recent advent of television, placed a premium on engineering experience. Conventional public utility regulation occupied but a small part of the FCC picture.

And so we can understand why, when President Eisenhower was inaugurated, four out of the seven commissioners then on the FCC were men with technical backgrounds: Webster, Sterling, Bartley, and Merrill. Two others were lawyers: Hyde and Hennock. Only former chairman, Paul A. Walker, had a background of straight regulatory experience.

Today, we find three out of the seven with regulatory experience: Chairman McConnaughey, Commissioner Doerfer (former chairman of the Wisconsin Public Service Commission) and Commissioner Lee (whose experience as an accountant-investigator with the FBI and congressional committees is a reasonably good substitute for regulatory experience, to some extent). Only one radio engineer — Webster — remains. Bartley was with the broadcasting industry. There still remain the two attorneys: Hyde, an FCC "career" ex-staff man, and Hennock.

Assuming that this trend continues, toward "regulating" commissioners as distinguished from "technical" commissioners, how will a future FCC operate? Merely speculating, it is reasonable to assume that the future FCC will give more attention to regulatory policy matters, leaving details of technical decisions (such as frequency allocations) to be thrashed out by the staff.

This is a rational tendency in view of the fact that the strictly technical phase of the FCC seems to be drawing to a close. The problems of setting up and allocating frequencies, while still complex, have been worked out and the mechanics of these controls have been established and tested. From now on, the FCC is more likely to be called upon to consider questions of a political-economic nature, such as the philosophy of conserving the radio spectrum. In the bargain, of course, the FCC may well have to give more attention to the telephone and telegraph jurisdiction, which is not to say that it has been neglected in the past.

One other minor note: Chairman McConnaughey comes from one state in the Union where a reproduction rate base is mandatory for fixing utility rates under the state commission statute. At least he will know all about that issue if it ever should arise seriously before the FCC.

Massachusetts Case Again

In this department last week, there was some comment on the decision of the Massachusetts Judicial Supreme Court returning to the Massachusetts commission for further study and order the refusal of the state commission to allow more than a 7.5 million dollar rate increase out of a request for 10 million dollars by the New England Telephone & Telegraph Co. Your correspondent suggested, then, that the court had by-passed the controversial question of whether the commission was right or wrong in refusing to consider present fair value in determining the rate base. Such comment was based upon early, fragmentary reports of the case.

Since then, this writer has studied the full text of the court's decision, by Justice Raymond S. Wilkins, and some clarification would seem to be in order. It is still true, as stated last week, that the court—in returning this rate case —refused to tip its own hand on the issue of fair value *versus* original cost rate base. However, the text of the decision plainly indicates that the court has no intention of interfering with the commission's predilection for prudent investment rate base in this particular case—even though the court does not necessarily agree with the commission's approach.

Here is what the opinion stated on that:

". . . we shall not adopt at this relatively late date a construction of the constitution of this commonwealth which compels the use of any particular theory or method or combination of theories or methods for determining a rate base. . . . We cannot read in the declaration of rights a mandate that either reproduction cost or original cost must be exclusively adopted in the regulation of rates of a public utility. We would not be justified in laying hold of any part of our fundamental law for the purpose of overriding the department merely because a particular approach to rate regulation was not used."

The Massachusetts court added that it was not foreclosing the possibility of reviewing the rate base determination in other proceedings, stating:

"We are far from saying that the course followed by the department in the present case would meet constitutional requirements in every other. Our holding is that in the present case confiscation is not clearly established."

In other respects, the court found that the allowed rate of return (6.313 per cent) was not confiscatory, but that it was doubtful if the reduced amount of the rate increase allowed by the commission would yield that sum. The court also held that the determination of the proportion of debt and equity capital which is to be raised, is clearly the prerogative of management but that it was not unlawful for the department to use an assumed debt ratio (45 per cent) in determining the cost of capital. Again, the court held that the department was in error in refusing to allow as expenses payments made to freeze the unfunded portions of the pension fund.

REA Developments

On the last day of September, REA had approved the largest rural telephone loan yet made. It amounted to $3,602,000, and it was made to an Independent telephone company — North Florida Telephone Co. It is true that a larger loan was made a couple of years ago—in the order of 6 million dollars — for the acquisition of telephone properties by an REA co-op group in Indiana. But this was later rescinded.

On the REA books, as of today, the North Florida Telephone Co. is the largest loan in the rural telephone field. The loan is expected to be used to finance a telephone system serving 7,278 subscribers—including 4,096 now

(Please turn to page 56)

Automatic PBX Line Assignments

By G. R. BRACKETT

IF AUTOMATIC private exchanges are to promote good service through smooth operation, it is important that line and trunk assignments be made with the future in mind so that arrangements and changes made necessary by growth in subscribers' needs can be easily made.

Even though the efficient use of equipment enters into the economical operation of the private system, the customer's wishes cannot be entirely ignored. Should the customer's requests materially affect the efficiency of the automatic equipment, he should be so advised and an attempt should be made to sell him on the economic and time savings that will be his, if the job is completed as engineered. But, should the customer continue to insist on the assignments he proposes, another study of the job should be made, prior to assignments, in order that various switch groups may be re-engineered to carry the load.

Every automatic PBX installation differs in the number of extensions, the number and arrangement of trunks and the nature of the business. Therefore, the number assignment job should be under the supervision of a qualified person, someone who is completely familiar with the switching arrangements engineered for the job and the communication problems that will beset the PBX to be installed.

In general, the conversion from a manual to an automatic PBX is similar to that of a central office. In a central office, switch fill is engineered on the basis of so many residence and so many business telephones per group of switches. A record of subscriber lines to be cut over are listed by their subdivisions of service together with information showing the characteristics of each line. Just such assignment carefulness should be apparent in the conversion to an automatic PBX. The assignment information should be listed by departments on a cut-sheet such as shown in the accompanying *Form A*. Also, the information on this sheet would be of good benefit in the compilation of a PBX directory and for information relative to the installation of the equipment.

Most of the headings on Form A explain themselves. The notes that follow describe headings about which there might be some questions:

SAMPLE FORM A
Record of Lines to be Cut Over

Subscriber Name
Address

Tel.No.

Date

Sheet No.
Total Sheets

Item No.	Name of Extension User	Dept.	Room or Floor No.	Ext.No.		Bridged Ext.No.		Line Finder		Characteristics					
													Usage		Miscellaneous
				Pres.	New	Pres.	New	Grp.	Term.	Grp. Hunt.	Man.	Restricted	High	Low	Off Premise, etc.

ITEM NO.—A guide to make easy reference to cases having need of special handling.

GROUP HUNTING — Extensions arranged for group hunting. Enter "X" marking opposite such extensions, bracketing the first and last numbers in the hunting group.

MANUAL—Show whether extension is or is not to have connector multiple. Use "MC" for manual with connector multiple and "M" for manual without connector multiple.

RESTRICTED — Show extensions restricted from reaching central office trunks as "RC." Show "RT" when extensions are restricted from reaching the tie trunks and "RCT" when they are fully restricted and do not have access to either central office or tie trunks.

It will help a great deal in the assignment program if the following information is known regarding equipment for the initial installation and the forecasted ultimate growth.

(1) Number and arrangement of PBX positions, including the end position.

(2) Number of line finder groups and number of line finders per group. Number of proposed extension lines in each group and listing of any group that is to be equipped with less than 200 terminals or lines.

(3) Number of connector groups, number of connectors per group and the proposed number of extension lines in each group. Assignment number of each group and whether it is arranged for hunting.

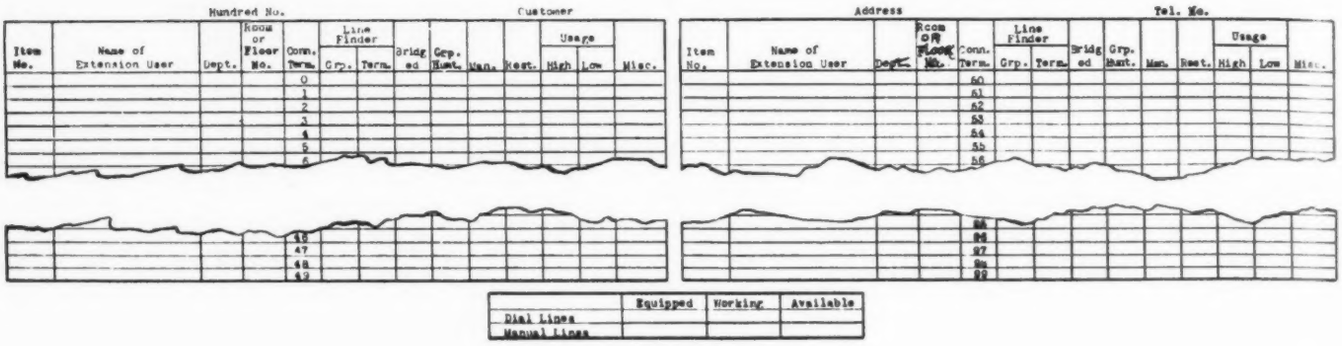
(4) If manual lines are to be installed, their location in the face of the switchboard.

(5) Whether dial controlled code calling equipment is to be installed.

(6) If manual conference equipment

SAMPLE FORM B

Connector Assignment Record



	Equipped	Working	Available
Dial Lines			
Manual Lines			

Form B

is to be provided, the number of trunk jacks and the number of extension jacks needed.

(7) If automatic conference equipment is to be installed, number of simultaneous connections needed.

Now that we have all the basic information needed, the next logical step is to determine which lines are to be assigned to each connector group. Automatic switches are installed on the basis of average holding times, calling rates and a known number of extension lines per group. It is of complete importance that the assignments be made so that each group carries its share of the traffic load.

Generally good load balance can be effected if the lines of each department are distributed equally over the connector group. But when the holding times and the calling rates have a marked variation, the heavy and scanty usage lines should be distributed equally between pairs of connector groups.

The illustration that follows pictures a method of assignment for an installation where four connector groups and two line finder groups of equal size are provided:

Department	Total No. of Ext. Lines	No. of Ext. Lines per Connector Group			
		1	2	3	4
Executive	16	4	4	4	4
Accounting	32	5	9	9	9
Installation	14	3	4	3	4
Manufacturing	155	33	41	41	41
Stock	14	4	3	4	3
Sales*	23	11	4	4	4
Shipping	16	4	4	4	4
Total	270	64	69	69	68

***It is assumed here that ten of the extension lines are arranged for hunting and that they have a heavy calling rate. There is only one hunting group provided, therefore, these lines are all assigned to the same group and allowance made by assigning a smaller number of total lines to this group than to the others.**

Connector Assignment Record

After determining the prorate of departmental extensions to each connector group, the actual assignment of these lines to terminals can be made. The accompanying *Form B* is suggested as a guide for a translation list, one form for each connector group. Each form has 100 connector terminals capacity and related line finder terminals. By using a form of this kind, it will be comparatively easy to show the status of each terminal. Certain items of information, shown on *Form A*, are included here as an aid in balancing traffic in the groups.

When a terminal is assigned to an extension user, the related line finder terminal and group number should be shown opposite the connector terminal. The connector terminal assignment and the related line finder group and terminal number should then be entered in the proper column on *Form A*, opposite the extension user's name. To help balance the traffic and to determine when each connector group has the correct number of assignments, the total number of terminals to be assigned may be entered at the bottom of *Form B* for each connector group.

Careful consideration must be given to the assignment of high and low-usage extensions between groups if a balance of both connector and related line finders is to be assured.

It will be easy to determine from *Form A* whether a good job of assigning has been done after all terminals have been distributed. If an unbalanced condition is discovered, extensions may be moved from one group to another for improvement of the load balance.

In cases where no cross-connecting frame is installed between the connector and line finder groups, special care must be used in terminal assignment. Once the private exchange is in operation, an unbalanced load condition in any line finder group cannot be corrected without an annoying number change.

Extension Line Arrangement For Group Hunting

When assigning extension lines to hunting groups, the future needs of the customer should be anticipated and non-hunting extensions which are likely to later become hunting should be assigned to the hunting group. Too, when growth is expected in a consecutive group the necessary spare terminals that follow the group should be held for the expected gain.

Do not start the first terminal of a hunting group with "0." This is the "10 digit" or the last terminal on a connector. Also avoid a series of numbers which end in "0" because the "0" precedes the "1" jack on the switchboard. Such terminals should be assigned to individual extensions that have been assigned to the hunting group as a balancing measure.

To avoid cord congestion at the switchboard, groups of extension lines arranged for hunting or consecutive testing should be spread over non-adjacent levels on the connector groups.

Restricted Lines

Where equipment has been provided for more than one class of restriction and no flexibility is provided between line circuits and connector terminals, it will be necessary to take into consideration extension lines arranged for restricted service when making con-

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nector terminal assignments because only one class of restriction can be taken care of on each line finder group. So, when more than one class of restriction is necessary, for example, (1) to central office trunks, and (2) to central office trunks and tie lines, the restricted lines assigned to each connector group related to a given line finder group must have the same form of restriction.

Unrestricted lines can be assigned to groups arranged for restricted service.

First of a Series

This article begins a series by Mr. Brackett on the subject of PBX operation. Business and industry are decentralizing and establishing plants and offices in the territories of the Independents, and are bringing with them demands for PBX service. Therefore, we feel this series will be of vital interest to Independent companies.

In future articles, Mr. Brackett will discuss: Automatic PBX Trunk Assignments; PBX Peg Counts—Traffic Studies; The Private Switchboard Attendant; Streamlining Customer Toll Dialing; Choosing and Training the PBX Service Adviser, and The PBX Service Adviser's Responsibilities in the Field.

Two-Party and Four-Party Lines

Two-party selective and four-party semi-selective extension lines should be assigned only to terminals wired for such service. Each line requires two or four terminals, according to the class of service furnished.

Test Terminals

Usually 99 terminal in each group of connectors is used for test purposes and should not be assigned to any extension telephone. On hunting connectors terminal 90 in addition to 99 is needed for test purposes.

Automatic Code Calling Equipment

If automatic code calling equipment is installed it will be necessary to assign a connector terminal to be used by the called party in dialing back to reach the calling party. Should the traffic be of sufficient volume to need two talking paths, two consecutive terminals on a rotary hunting connector should be assigned for the purpose.

Automatic Conference Calling Equipment

Automatic conference calling equipment circuits should be assigned consecutive terminals of a selector level of a regular selector, a selector-connector or a two-digit rotary hunting connector. Normally these circuits can also be assigned to a hunting connector or a hunting selector-connector. Should a selector level be used, the entire level must be reserved for conference service, except in two-digit rotary hunting selector operation. In such cases only terminals necessary for conference service need be reserved. The remaining terminals can be assigned to other services.

Assignment of Extensions to Line Finder Groups

Where cross-connecting facilities are not provided between the line finder and connector groups, the assignment of extension lines to line finders and the loading of the line finder groups become automatic by the connector assignments, since two groups of 100 connector terminals are permanently wired to one group or 200 line finder terminals. Therefore, each assignment should be closely examined to determine the high or low originating calling rate and the long or short holding time which might affect the balance of the line finder groups. Should the assignment of extensions be made by department, floors or groups in a building and the traffic over the connector is not even, the load balance of the line finders can be bettered by connector assignments which associate heavily and lightly loaded connector groups with the same line finder group.

If there is an intermediate distributing frame installed between the line finders and connectors, line finder assignments can be made independently of the connector assignments and thus a greater degree of load control or balance can be had than when cross connections are not provided.

Line Assignments on Working Automatic PBX's

It is desirable to maintain a balance of connector and line finder loads on PBX systems once they become operative. The following suggestions can be used as a guide to cover the assignment of additional lines and the rearrangement of present equipment.

Form B can be used for maintaining a record of the connector terminals and groups. Such a record should show in the "Extension User Space" the exact status of each terminal:

WORKING TERMINALS. Show the name of the extension user together with notations required under the other headings at top of form.

VACANT TERMINAL. No entry.

TERMINAL RESERVED FOR GROWTH—CONSECUTIVE SERIES. Enter word "reserved."

UNEQUIPPED TERMINAL. Indicate by a line drawn through extension user space.

CHANGED NUMBER. Erase original name and enter the letter "O" followed by the date when number was changed.

The connector terminal record should be watched closely and balance reviews taken occasionally to determine if load adjustments are needed to keep up a good balance on the groups. It is an excellent idea to make such a balance check soon after a conversion to automatic. The change from manual to automatic operation generally is responsible for an increase in usage of the PBX facilities. The quicker service seems to promote a high extension calling rate. Following are a few examples of what effect certain changes could have on line finder and connector balance.

Manual Lines with Connector Multiple Changed to Automatic Lines. Occasionally customers request a conversion of certain manual lines equipped with connector multiple to complete automatic operation. Such lines then require line finder terminals as well as connector terminals and all originating traffic will flow through the line finders. It may be necessary in some cases to change the connector assignments (in other words make a number change, if there is no connecting frame between the line finders and connectors) in order to relieve an overloaded condition on the related line finder group.

Excessive Number of Bridged Stations. Occasionally excessive bridged stations are installed to increase the capacity of existing facilities, little realizing careless additions of this kind could result in a demoralizing affect on the traffic distribution and cause an unbalanced condition on the switch groups affected. Excessive bridging could result in a demoralizing effect on and misuse of both automatic and switchboard facilities because of the large number of station busies encountered.

In administering line assignments in existing automatic systems it is well to consider that traffic handled by each line finder group has a direct influence on the efficient use of the trunks from first selector levels, because of line finders being connected to the first selectors and these are sub-grouped to provide the necessary load for each level on the basis that the traffic on the line finder group is evenly balanced. If a proper balance is to be maintained and equipment is to operate to the complete satisfaction of the customer, the assignment of connector and line finder terminals on existing installations should be under the supervision of one person who should keep the records up to date and be responsible for all assignments.

The OPERATOR'S CORNER

by MAYME WORKMAN, Traffic Editor

WHILE attending the "Open House" of a local manufacturing company recently — and you may wonder, "Why was I there?" and I would have to admit that I was curious to see how other companies conduct such things—I picked up a card with the word SMILE engraved in large red letters, under which was printed, *Because Life in the U.S.A. Is Wonderful!* This is a well-known fact on the part of most Americans, but how often do we stop to think about and appreciate it?

This is our country! The United States of America, one of the world's greatest powers, one of the youngest of nations, the oldest of republics. Canadian neighbors on the north, the great Pacific on the west, colorful Mexico on the southwest, the Gulf of Mexico on the south, and the mighty Atlantic on the east.

Geographically, our country is one of the favored nations—broad plains, fertile soil, natural waterways, mineral riches below the ground.

Our country is bound together by bands of steel, by wires of communication, by plane, radio, television, and millions of newspapers and magazines carrying its story to every home.

Our country's people are energetic, intelligent, thrifty. They have created a standard of living conditions for themselves far higher than any people in the long course of history. And they have created and maintained the most precious of all possessions—individual liberty.

History records the big events in our nation, but it is the little events of everyday life in each little community which contribute to those big events—the benevolence, the love, the heartaches, the sacrifices behind the scenes. It is the devotion of individual Americans to ideals of free government, expressed in their everyday lives, which has enabled our republic to go forward through many years of unparalleled progress.

Now, when our country faces new problems, world-wide — new dangers never before encountered by mankind, is a good time to "count our blessings, one by one," and to do our part to preserve the wonderful privileges we enjoy in our beloved America.

This is not the time to sit smugly by, enjoying the privileges of a bountiful and free country, taking for granted that the "American Way of Life" will always be ours to enjoy. We trust, we hope, we presume that the heritage given us by our forefathers will be everlasting. Yet, if we stop to think, we will realize that we must safeguard, improve and add to our heritage if we expect to pass on to coming generations the way of life we were given by our forefathers.

Now is a good time to appraise this heritage of ours. We have a form of government based on a fundamental belief in God—a government designed to serve the people, not to rule them. Under this form of government we have reached the highest standard of living known to the human race, with more people enjoying an abundance of the material things of life than in any other country. We work fewer hours with greater returns than any other nation.

We have firmly established rights which protect and give freedom to all individuals. Among these rights are:

The right to worship God in one's own way.

The right to free speech and press.

The right to assemble.

The right to petition for grievances.

The right to privacy in our homes.

The right to trial by jury — innocent until proved guilty.

The right to move about freely at home or abroad.

The right to own private property.

The right to work in callings and localities of our choice.

The right to bargain with our employers.

The right to go into business, compete and profit.

The right to bargain for goods and services in a free market.

The right to contract about our affairs.

The right to vote.

The right to a secret ballot.

The right to the service of government as a protector and referee.

The right to freedom from arbitrary government regulation and control.

This is the definition of our American Way of Life.

Telephone operators are good Americans and their work at the switchboards enables Americans to exercise the right to free speech.

Things that are valued lightly are easily lost. I'm glad I saw the little card, SMILE, for it caused me to evaluate my many blessings as an American citizen and I hope it will also result in your being conscious of them, because life in the U.S.A. is truly wonderful.

Traffic Questions

(1) If there is no prescribed subsequent attempt time and the calling party does not indicate one, what action should be taken by the operator?

(2) When the TX operator determines that two tickets cover the same call, should she enter "dup" on the second ticket?

(3) How long should tickets endorsed "hold for ag" or "hold for wh" be held by the operator?

(4) Does the operator still reach the calling party and request his permission to try the call on tickets containing the entry "hold for ag" or "hold for wh"?

(5) When should the operator check the availability of the calling party?

Answers are presented on page 52.

V V

"Research is exemplified in the problem-solving mind as contrasted with the let-well-enough-alone mind. It is the composer mind instead of the fiddler mind. It is the 'tomorrow' mind instead of the 'yesterday' mind."—CHARLES F. KETTERING.

HOLAN POWER

AND ASSOCIATED

CHECK LIST

SERIES 3700 HEAVY-DUTY LIVE-BOOM DERRICK

*12,000 Pounds rated capacity • three-legged • *full capacity live-boom • no obstructions at rear of body • *automatic throttle control • positive fully enclosed link drive • all cylinders double acting • check valves and resistors among the many safety features • insulated controls—extend away from body for additional safety . . .

CHECK LIST

SERIES 4700 LIGHT DUTY DERRICK (Front or Rear Mounting)

6500 Pounds capacity • two-legged • limited live boom action • rear opening of body obstructed by side legs • limited rear platform loading • excessive body reinforcement not required • low initial cost • be sure to check effective lever arms in the 4700 Derrick

3700 DERRICK handles 70-foot poles with ease. *Variations are now available to handle up to 100-foot poles and "H" frames.

*195 DEGREE WORKING RANGE of 3700 Derrick Model "HL" to 5-foot ground height permits easy threading of winch cable through derrick head.

*STIFF-LEG INTEGRAL removes pole from toughest ground.

*SELF-STOWING HYDRAULIC JACKS (Patents applied for) (Optional) Self positioning in matter of seconds—will level rear of body—raise rear wheels — eliminates crawling under truck — no pins — lever controlled simplicity promotes use by linemen.

DERRICKS

POWER EQUIPMENT

. . . designed for any operating condition

. . . priced for any budget

OUTSTANDING

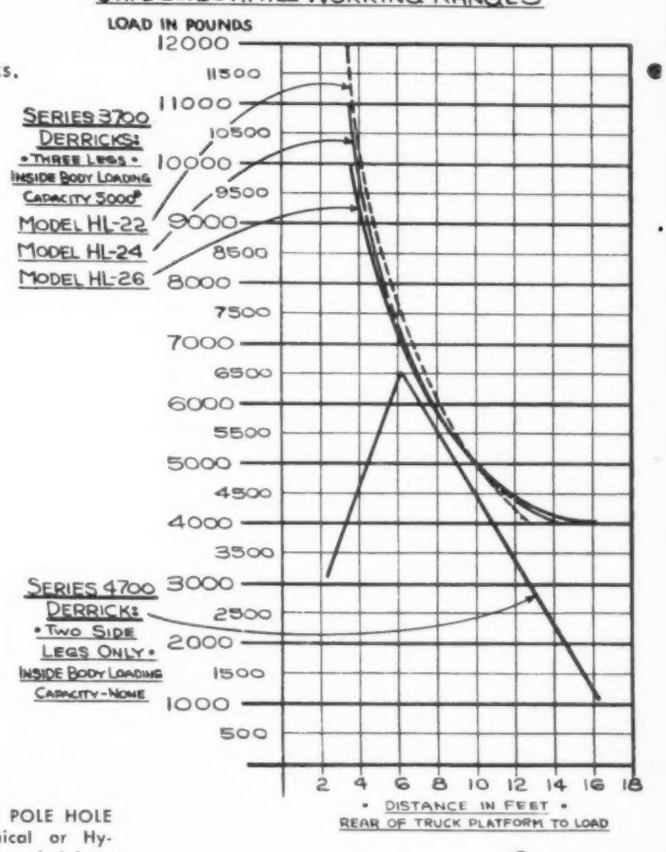
and untiring research and development has made it possible for the Holan Corporation to offer you these new labor saving devices. If your check list for power derricks is based on CAPACITY, OPERATING FEATURES, DESIGNS, BODY LOADING FEATURES, EFFECT OF LOADING ON BODY PROPER, OPTIONAL EQUIPMENT FOR GREATER VERSATILITY, SAFETY . . . then PRICE, your first choice will be these New Holan 3700 and/or 4700 Derricks.

- For the maximum in power and performance, the 3700 Heavy Duty Live-boom Derricks have no equivalent.
- For a front or rear mounted light duty derrick the 4700 will compete with the best of them.
- For optional equipment, such as, self-stowing hydraulic jacks, portable pole hole diggers (mechanical or hydraulic drive), designed to cut operating cost, check Holan.

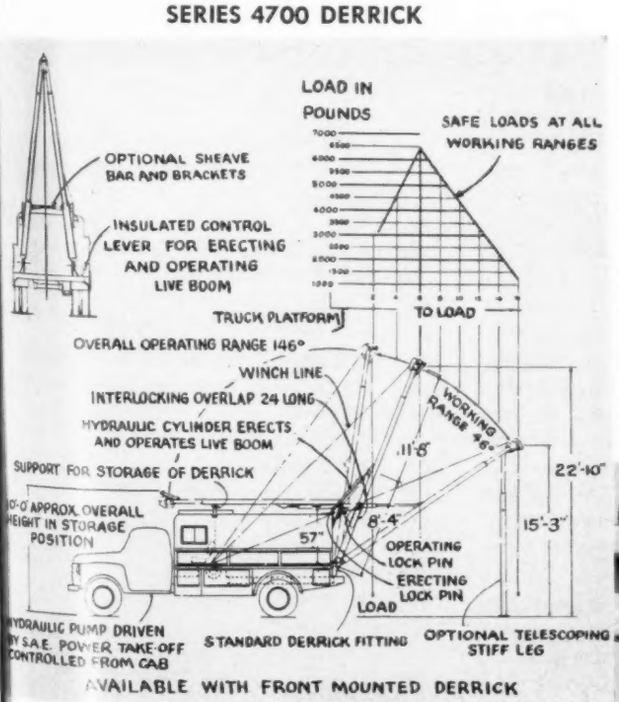
Others eventually will duplicate these advantages in capacity, design and optional features. But, you can reach a new low in installation, service and maintenance costs *today* with these new improved Holan derricks—typical of the new complete line of HOLAN LABOR-SAVING EQUIPMENT.

PERFORMANCE CHART

SAFE LOADS AT ALL WORKING RANGES



SERIES 4700 DERRICK



AVAILABLE WITH FRONT MOUNTED DERRICK

*NEW PORTABLE POLE HOLE DIGGER (Mechanical or Hydraulic Drive) Suspended from derrick — compact — many new safety features—another "first" in many ways!

*Another HOLAN "First"

J.H. HOLAN CORPORATION

District Sales Representatives
6-03 161st Street, Beechhurst, Queens, New York
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Hydraulic Derricks • Jacks
Ladders • Towers • Diggers
and Accessories for
Truck Bodies

THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

SOME time ago we made mention of the fact that an experiment with spraying from an airplane to control brush growth under and near an aerial wire communication line had been conducted by the Alaska Railroad. We now have a letter as follows from F. W. Shellhorn, superintendent of communications of this railroad, in which the results of this test are indicated.

"We have found in our airplane brush spraying project that spray control is difficult. The kill was almost 100 per cent complete, but only about 40 per cent of the spray was actually effective as it had drifted far enough from the pole lead itself so as to decrease the actual effectiveness.

"We have had some discussion with local pilots with regard to this, and it is believed that methods could be worked out so as to assure that coverage would be in the proper location so the kill would be practically 100 per cent effective. Discussion is centered on the use of fluorescent type dyes to be added to the spray. This would increase the cost somewhat, but it appears to be the concensus locally that we could get a 40-foot to 50-foot right-of-way effectively sprayed at an actual cost per mile of $100 to $125, depending upon the terrain. Pilot information, however, is that in extremely mountainous country where there are many angles in the line, aerial spraying would not prove practical. In the case of the Alaska Railroad, opinion seems to be that approximately 80 per cent of our mileage could be aerially sprayed. From my knowledge of the terrain, the same should prove true of the Anchorage-Tok Junction line.

"We expect to continue experimentation on this aerial spraying, but have abandoned any plans for more actual tests until next May. We will be glad to keep you informed of any progress or results that we may obtain."

It appears that aerial spraying of lines would prove a real economy if some means could be devised to accurately control the width of the strip treated. In most sections of Alaska, crops are not a problem along the lines as they are in the States.

• • •

It has been said that if you take responsibility on your shoulders, it will leave no room for chips.

• • •

Personal, private paging of roving persons anywhere in a building or on the nearby grounds is now afforded through the use of a recently developed system. This is accomplished by the use of a miniature four-ounce receiver and speaker, designed to be worn on the person. This unit, it is claimed, delivers messages clearly and quietly for utmost privacy. It is further claimed that this set will receive messages in areas of high noise level. Individual or group signals may be used for selective paging.

The receiver unit is housed in a modern moisture-resistant case and includes a volume control, variable adjuster mechanism, and a flexible cord. A high fidelity flat response receiver, modulated for 250 to 5000 cycles, coupled to an acoustical bell-horn assures full sound reception.

• • •

The Pentagon building in Washington contains the largest private branch telephone exchange in the world, with facilities adequate to service a city the size of Durham, N. C., Galveston, Tex., or Wheeling, W. Va. It is a dial system occupying 32,000 square feet of space and serves over 44,000 telephones.

About 28,000 of these instruments are located in the Pentagon proper while the remainder are in some 32 other buildings in the Washington area. Each telephone within the Pentagon system can dial the others direct. Other government switchboards are reached by dialing a code that routes the call through a government tandem.

Incoming calls, both local and toll, and outgoing toll require the assistance of manual operators; 110 operating positions on the switchboard are used for this purpose. About 200 people, including operators, supervisors and administrative personnel, are required to furnish service 24 hours a day, seven days per week. The Department of Defense's telephone directory contains nearly 40,000 listings, covering not only the Pentagon, but other defense installations which are served from the main switchboard.

Local service to nearby telephone exchanges requires over 550 trunk circuits with an additional 165 trunk circuits to the toll switchboards. A total of 250 trunk lines are provided to the government tandem that serves other government departments in the Washington area.

Monthly telephone usage during 1953 averaged 4½ million dial calls, 2 million manually handled incoming local calls, and 270,000 toll calls. About 150 public pay telephone booths are distributed throughout the Pentagon.

The special communications requirements of the Department of Defense, including the military services, to continental and overseas locations are handled by private line services over cable and radio facilities.

• • •

It has been our privilege to inspect a great number of new automatic telephone exchanges during the past few months. It is quite apparent that connections, in general, are now soldered much better than they were in the past. True, soldering irons and even solder is better now than ever before; but, in addition to this, men also have developed greater soldering skill.

In the past, lumped solder on a joint was not uncommon. Rosin joints were not unusual and seldom did solder flow on the under side of all punchings. Now, one can examine thousands of soldered connections on a new installation and find practically all of them nearly perfect. A good soldering job, to this old wire tangler, will forever be a thing of beauty!

PLANT MAN'S QUIZ

by RAY BLAIN, Technical Editor

Q. We have abandoned the idea of using magnesium ladders on our installation trucks for the reason that they are conductors of electricity, and therefore we consider them a hazard. Now we wonder if wooden ladders are considered safe.

A. Wooden ladders have been used for many years and if they are carefully used and properly maintained, in our opinion, they are as safe as any ladder can be. Good ladders are now built strictly in accordance with safety regulations. Rungs are usually second growth hickory, reinforced with steel rods and may be equipped with automatic locks and safety shoes.

In our opinion, wooden ladders should never be painted as this only adds to their weight and may cover defects which could cause an accident. Many favor treating ladders with linseed oil and some coat them with clear spar varnish.

When ladders get old or when weak points are suspected, discard them and buy new ones. After all, good ladders cost less than accidents.

• • •

Q. We are considering the installation of air conditioning in our exchange but because of the high water rate in our locality we fear that the cost of operation may prove excessive. Do you have any information as to the water consumption of the various types of air conditioning systems?

A. Due to the fact that air conditioning systems installed in telephone exchanges are usually tailor-made to meet local conditions, it would prove most difficult to give you any general information which might prove useful. It is suggested that you get an estimate from several local contractors as to the system you may require and its probable operating cost.

Also, it is understood that fairly large air conditioning systems are now operating satisfactorily on air-cooled compressors.

There is, in addition, an evaporative condenser available that has been designed to reduce air conditioning operating costs.

This unit is housed in a compact, weather-resistant cabinet, and employs a turbulator which continuously bathes the condenser coil in a heavy mist to rid the refrigerant of its heat. A blower unit, mounted above and behind the turbulator, speeds up evaporation and exhausts warm air to the outside. The water is recirculated so that only a small amount of it is consumed.

• • •

Q. Will ceiling-mounted fluorescent lighting prove satisfactory for a manual switchboard operating room?

A. We have seen a considerable number of installations of this type that have all proved entirely satisfactory.

The shadowless non-glare fluorescent lighting has many advantages for this purpose over many of the older conventional types. Care should be exercised, however, to locate the ceiling-mounted lights properly with respect to the location of the switchboard. A little experimenting along this line will indicate the proper position.

• • •

Q. We are planning to convert our manual magneto exchange to automatic operation in the near future. In order to reduce the number of subscribers on each line to 10 or less, we shall have to build about 18 new lines. What type of wire in your opinion will be the best for this purpose?

Assuming that high resistance wire splices and tree interference have been obviated, after converting to automatic operation, could we continue to use those parts of our present system which proved satisfactory for magneto service? We ask this question advisedly because we frequently hear farmers complain about the poor service which occurred after their magneto lines were converted to automatic operation.

A. It is our honest opinion that any of the approved types of line wire, if used and maintained properly, will prove entirely satisfactory for rural line use.

However, care should be taken to select the type best-suited to meet your local conditions. Not being familiar with the latter, we shall attempt to give you a few general ground rules which, it is hoped, may assist you in making a proper selection.

In general, lines should be designed so as not to exceed the following percentages of the rated breaking strength for the conductor in any single span:

Heavy loading area—85 per cent
Medium loading area—75 per cent
Light loading area—60 per cent

In addition to the above, the choice of line wire should include consideration of the transmission and signalling levels that must be met for the length of the circuit involved. The choice of the wire should be such that the mechanical characteristics are in keeping with the application of the wire—such as span length which may be selected, the loading area involved, the topography of the area, etc.

It is proper to assume that if you have good lines now which give good magneto service, these can be made to operate equally as well under automatic operation. This is based upon the assumption that the wire is good, all splices are properly made and that the line is well-insulated and balanced. Moreover, that the line length provides station loops well within the transmission and supervisory limits of your dial system.

There is no good reason why you cannot salvage the good parts of your old plant, or that it will not operate satisfactorily on your automatic system. You must keep in mind, however, that your new additions must be properly engineered so as to fit into the over-all supervision and transmission scheme.

• • •

Q. We have experienced great difficulty in running drop wire across streets to serve ranch type houses. This type of house is usually so low that even when the drop wire is attached to the highest point, proper clearance is not obtained over the street. What method is recommended in locations of this type?

A. We must admit that this is at best an awkward situation. In some cases, an angle iron bracket is placed on the house so that the drop is elevated several feet above the roof. Others set a pole near the house to support the drop wire across the street. Usually one pole will serve two or more houses.

When neither of these arrangements can be used, an underground service entrance should be considered as a last resort.

V V

The culmination point of administration is to know well how much power, great or small, we ought to use in all circumstances.—MONTESQIEU.

Tearing through New England, the twin hurricanes—named Carol and Edna—levelled massive trees, some dating from pre-Revolutionary days—leaving a snarl of debris and tangled telephone wire. Cleaning up after this gigantic Operation Snafu called for thousands of telephone repairmen. Construction trucks and trains came from Bell companies as far away as Detroit, Pittsburgh and below the Mason-Dixon line. A Baltimore convoy drove 24 hours to the aid of New England T&T. The weary crew's first glimpse of the Taunton-Brockton, Mass., area (above) gave a fair idea of the task ahead.

EDNA AND CAROL WERE TOUGH "GALS"

NEITHER was a lady. They were rough, tough girls. They were spawned — Carol and Edna — in the tropics. Once they were soft warm breezes, gently revolving. Then, like a Cyclops, each grew a single clear blue "eye." Around this eye began to whirl, counter clock-wise, a ragged skirt of roaring wind, torrential rain and ocean spray.

Hurricanes are ugly cousins of those land-based monsters, the cyclone and the tornado. They are sisters of the Pacific typhoon.

All these cyclonic storms are mortal foes of telephone men, just as they are foes of all men, and of everything men build or tend: their homes, their crops and gardens, the trees that shade their lawns, their churches; their towns and cities.

Telephone people have learned by experience how to fight hurricanes. But hurricanes always hurt us. We can not turn back wind that swirls in at 100 miles per hour. We can not turn off a deluge. Or push back a tidal wave.

The victory of telephone men over hurricanes is a matter of repair and restoration. Telephone people try to bring dead telephones back to life quickly.

The speed with which they do this job comes from knowing beforehand all the many things that must be done; how much equipment may be needed and how to move it; how many men are needed, and where to send them.

This is called "disaster planning." It involves much paper work. Supplies stacked up in warehouses. Trucks. And —above all—it takes men who know their jobs.

Hurricane Carol

Carol was a dawdler. For days she nosed along the southern seaboard, kicking the ocean into giant combers. She was indecisive.

Then, on Tuesday, Aug. 31, Carol ripped across Long Island, sending out a wet whiplash toward New York City.

Now, having tasted solid land instead of salt sea, Carol picked up speed. She howled into Cape Cod and the New England mainland. She filled the streets of historic Providence with dirty tidal water. In Boston, she knocked down the tower of the North Church immortalized by the ride of Paul Revere.

In the vivid phrase of a newspaper-

1. The second Bell of Pennsylvania convoy leaves for stricken area. Destination: New Bedford, Mass.

2. Map in Bell System hurricane headquarters at AT&T in New York pinpoints the movement of construction crews into areas threatened by the second hurricane, "Edna." Left to right: P. P. MAYRER, engineer; E. G. GREBER, plant operations engineer, and G. R. KNELL, plant service engineer.

3. Faithful audience supervises crew on street in Taunton, Mass.

4. Scenes like this were common along the New England coast.

5. A street in Taunton: first day's assignment. Before job was started, area was checked for live wires.

6. New England crew at Newburyport, Mass., tighten slack on wire securing pole top. Tree in background brought cable with it when it fell.

7. Line Foreman BILL DEBOW of the Maryland convoy, catches up on his lost sleep.

8. A telebus is set up in Hyannis, Mass., by New England T&T company for use by residents until service was restored. Bus was moved periodically to various locations on hard-hit Cape Cod.

9. Lineman FRED COWAN checks desk clerk for messages at hotel in Brockton, Mass., before turning in. The first day was rough—and more followed.

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ALL ROOM
Rentals
IN ADVANCE
PHONE BUSINESS OFFICE
TELEPHONE

man, Carol then pounded New England with "big wet fists." In her wake she left 334,000 telephones out of service, 140 central offices isolated, 2,000 toll circuits out, 2,800 cases of cable trouble. Commercial power failed at 378 central offices making it necessary to use the emergency power provided for such occasions.

Hardest hit, of course, was the territory of the New England Co., where 250,000 stations were "out," and where damage to telephone company property ran approximately 6.2 million dollars.

New England telephone people, veterans of the hurricanes of 1938 and 1944 and the wind storm of 1950, had prepared for Carol. As the storm abated, repair and construction men in the five-state area went into action, 5,500 strong, and worked day and night.

From Western Electric came drop wire at the rate of 2 million feet a day. In the Boston distributing house, men worked by candle-light. Traffic in many New England exchanges soared far above normal. In Connecticut, on the day of the storm, a new long distance calling record was set.

Big Green Fleet Moves North

The pattern of disaster planning calls for the resources and manpower of the Bell companies to be concentrated where help is needed.

New England needed help.

In six Bell companies and in Long Lines, men and equipment mobilized on the day Carol struck.

In New York, in Southern New England, in Bell of Pennsylvania, New Jersey, and in the Chesapeake and Potomac Telephone Cos. in Washington, D. C., and Baltimore, men and vehicles assembled. Trucks of the big green fleet began moving north.

Altogether, 1,658 men in 900 trucks and cars converged on New England highways. Scores drove through the night. They fanned out to the hard-hit cities and towns: Boston, Taunton, Salem, Providence, Newport, and many others.

Massive trees, many of them planted in pre-Revolutionary times, had fallen across telephone lines. High tides and heavy rain caused extensive "wet damage." Wires were tangled in brush hurled by the wind. Debris blocked the roads and littered smashed homes.

Reinforced, the New England company's task force brought all isolated central offices back into operation in three days (by Friday night, Sept. 3), and restored service to more than half of the out-of-service telephones. Working with almost military precision, telephone men brought service back to "normal" in five days.

Then Edna boiled up from the South.

Hurricane Edna

Edna had a different personality.

Where Carol had been indecisive, Edna seemed at first to know exactly where she was going.

Edna was bigger. Stronger. Within her spinning circumference, winds roared at 125 miles per hour. She moved northward steadily, straight at New York and New England.

That was just about a week after Carol's disastrous visit.

In the AT&T building in downtown New York, engineers set up a "hurricane center" to trace Edna's course up the coastline and to coordinate the movement of men and vehicles.

The center alerted telephone companies as far away as Southern Bell, Southwestern Bell and Northwestern Bell that their help might be needed.

Still in New England company territory were about 790 men from other Bell companies who were cleaning up after Carol. These men postponed their return home.

Over 400 men were mobilized in Bell of Pennsylvania even before Edna struck. About 350 more began forming new convoys in Long Lines, New Jersey and Southern New England.

In Detroit, Michigan Bell began mobilizing men and trucks to travel by rail into New England.

Edna veered eastward on Saturday, Sept. 11.

Although she was far out at sea, she churned the New Jersey coast and drenched New York in the heaviest rain in 45 years. She flicked the tip of Long Island. Then in the open sea near Marthas Vineyard and Nantucket her Cyclopian eye split in two—her own violence began to tear her apart. She boiled along the New England shore and cut slightly inland at Eastport, Me.

Edna was not as rough as Carol, said New Englanders.

Yet in Edna's side-swiping trail were over nearly 295,000 telephones knocked out, 2,600 toll circuits interrupted, and 49 small exchanges (31 of them Bell) isolated in New England.

Once again, New England's crews were out in strength. By the next night (Sunday) they had brought over 105,000 telephones back into service. Only 350 toll circuits were out, and only one Bell exchange was still isolated.

In six days, service was restored to normal with an estimated restoration cost of 5.5 million dollars.

"Edna, Here we come!"

In Detroit, the storm task force organized by Michigan Bell had been alerted Saturday (Sept. 11) while Edna's course was still in doubt. The men marked time while Edna made up her mind.

Then came the signal from Massachusetts and Maine: "We need you!"

In a scene reminiscent of an army division going into combat, the task force left Detroit on Sunday for Boston and Portland.

The men filled a special eight-car train. Behind, on 90 flat cars, rumbled their vehicles—almost 200 of them, including 20 giant 19,000-pound construction trucks.

As the crew moved out of the Michigan Central station, shouts went up: "Edna, here we come!"

Civil defense officials, said the Detroit newspapers, were "fascinated" by the project.

"We will do as much for you"

The violence of Carol and Edna fell mainly on New England Co., and it was their force of skilled men and women that bore the heaviest burden of restoration.

The men and equipment who came by truck and train—from as far west as Detroit and Pittsburgh and from below the Mason-Dixon line—were reinforcements for a gallant crew.

New Englanders appreciated the help. They expressed their gratitude in grins and cheery greetings as the big green trucks with "foreign" license plates rolled through their wreckage-strewn streets.

In a letter to the Bell of Pennsylvania, Erskine N. White, vice president of the New England company, summed up his company's thanks:

"One of your boys indicated that perhaps some day you might need help from us. I would never wish such an experience on anyone, but if you are ever in trouble, you can be sure we will do as much for you."

From the executive department of The Commonwealth of Massachusetts came this message from Governor Christian A. Herter to New England Telephone & Telegraph Co. President J. E. Harrell:

"In behalf of all of our citizens in Massachusetts in the areas swept by Tuesday's hurricane, may I take this opportunity to send my deep gratitude through you to the army of telephone

(Please turn to page 44)

REA Allocates $1,582,000 in Loans in Five States

Loans amounting to $1,582,000 were approved by REA to improve and extend rural telephone service in Louisiana, Minnesota, Texas, Wisconsin, and Kentucky, the U. S. Department of Agriculture announced on Sept. 28. Details of the loans follow:

Breaux Bridge (La.) Telephone Co., Inc., on Sept. 14 was allocated $318,000, second loan to this borrower.

The new loan funds will be used to provide facilities, including 83 miles of additional line, to serve 637 subscribers who were not included in the first loan of $253,000, approved in July, 1951. The two REA loans will enable the Breaux Bridge company to furnish new and improved service to 1,838 subscribers over 219 miles of line in St. Martin parish.

Automatic central offices for the system will be located at Breaux Bridge, Arnaudville, Cecelia and Parks. Present plans call for service without toll charge among all of the exchange areas.

Earl J. Conrad is president and manager of the Breaux Bridge company.

* * *

Farmers Mutual Telephone Co., Madison, Minn., on Sept. 20 received an allocation of $237,000, fourth loan to this borrower.

The new loan funds will be used by the borrower to acquire the Bellingham (Minn.) Telephone Co., serving 237 subscribers, to convert it to automatic operation, rebuild the 92 miles of existing line and add 75 miles of new line.

These changes will make it possible for the Farmers Mutual company to furnish improved service to the existing subscribers and initial service to 160 rural families. With the four REA loans, totaling $475,000, the company will be able to bring modern telephone service to 775 rural families in Lac qui Parle county through the Cerro Gordo and Bellingham central offices.

Selmer Torstenson is president and William A. Preble is manager of the Farmers Mutual company.

* * *

Guadalupe Valley Telephone Cooperative, Smithsons Valley, Tex., also on Sept. 20, was allocated $76,000, second loan to this borrower.

The new loan funds will be used to expand the present service area into the nearby community of Balcones. The borrower plans to acquire the Balcones Mutual Telephone Co. with its own funds. This company now serves 63 subscribers.

Loan funds will convert the system to automatic operation and add 55 miles of new line and other facilities to serve 35 additional rural families.

Both REA loans, totaling $687,000, will enable the Guadalupe cooperative to offer new and improved service to more than 800 subscribers in Comal, Kendall, Blanco and Bexar counties. Dial central offices of the system will be located at Bulverde, Sabina, Kenberg, Smithsons Valley, Sattler and Balcones.

Since the first loan was approved in August, 1953, contracts have been awarded for outside plant and central office equipment in all of the exchange areas except Balcones. The borrower hopes to cut over these exchanges in early 1955.

I. W. Mitchell is president and Allan Sanders is manager of the Guadalupe Valley cooperative.

* * *

Cream Valley Telephone Co., Hawkins, Wis., on Sept. 20 was allocated $65,000, third loan to this borrower.

These loan funds will be used primarily to complete construction in the Hawkins exchange area of the Cream Valley system. The Hawkins office will be converted to automatic operation, and 52 miles of new line and other facilities added to serve the subscribers in this portion of the system.

The REA loans, totaling $265,000, will enable the Cream Valley company to furnish new and improved service to 574 subscribers over 170 miles of line in Rusk and Price counties. Since the first loan was approved, the Kennan central office has been cut over to automatic operation. About 200 subscribers are now receiving service in that vicinity. Present plans call for service without toll charge between the two exchange areas.

Ernest E. Glazier is president of the Cream Valley company.

* * *

Twin County Rural Telephone Cooperative Corp., Hodgenville, Ky., also on Sept. 20, received an allocation of $886,000 to improve and extend rural telephone service in Hardin, Larue, Marion and Nelson counties.

The Twin County organization plans to use the loan funds and funds of its own to build a modern telephone system which will serve approximately 1,950 subscribers in central Kentucky.

It proposes to purchase the following properties as a nucleus for the new system: The Glendale and Sonora magneto exchanges and 58 miles of rural and toll lines from the Southern Continental Telephone Co.; the facilities of the Farmers Cooperative Telephone Co. at Buffalo and those of the Magnolia (Ky.) Telephone Co. Together, these facilities are now serving 308 subscribers and 606 switchers.

The REA loan will be used largely to improve service for the existing subscribers and to furnish initial service to 1,030 unserved rural families in the present operating area. New dial central offices will be constructed at Buffalo, Glendale, Hodgenville (rural) and Tunnel Hill; 85 miles of the existing line will be rebuilt and 329 miles of new line added.

The switchers served by the acquired facilities will abandon their lines and become regular subscribers of the new cooperative as soon as service is available. According to present plans, service without toll charge will be available between some of the borrower's exchange areas. The completed system will consist of 421 miles of line.

Richard Burks is president of the Twin County corporation.

Men with Ideas:

They keep a keen eye out for new business—and they "follow-up" fast on inquiries. That's how these men make a success of P-A-B-X selling!

Photo by Northern Ohio Telephone Company

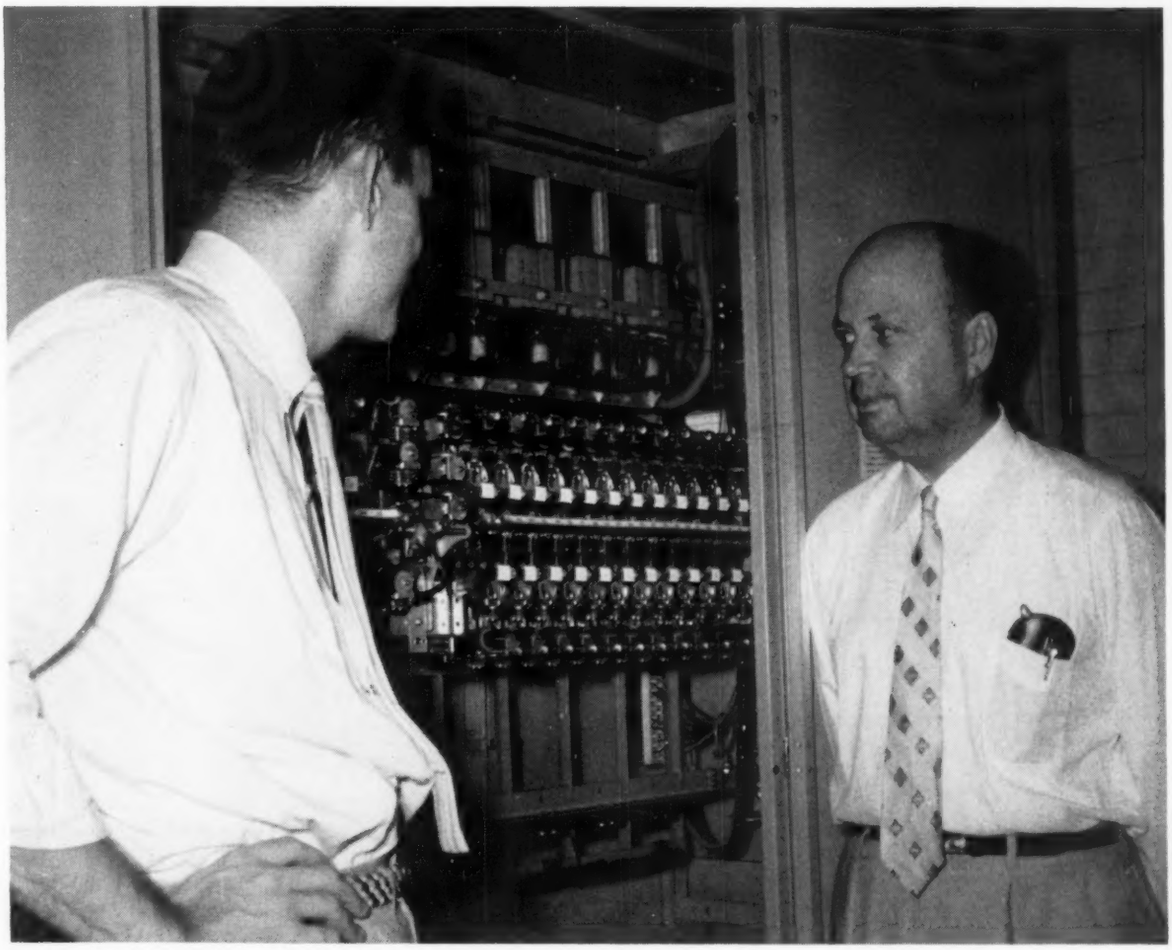
Nap T. Videan (right) Commercial Representative, Northern Ohio Telephone Company, shows prospect how P-A-B-X could save valuable time and footwork in prospect's office.

Mr. Videan's most effective scheme for P-A-B-X promotion stems from his use of five-station wiring plans. When a request comes in for the sixth station, that subscriber is immediately tagged as a P-A-B-X prospect. "In each case," says Mr. Videan, "where I have had the opportunity of explaining P-A-B-X, I have never had any difficulty in selling this service on my first call."

Canvassing is another effective method of locating P-A-B-X prospects, Mr. Videan finds. Inquiries for P-A-B-X service are answered by a sales letter, followed by a personal call.

Northern Ohio Telephone Company operates 66 offices and 65 P-A-B-X's.

hey're making P-A-B-X pay!



L. A. Corning III (left), Tarboro Sales Supervisor, Carolina Telephone and Telegraph Company, chats with Dr. Theo. Easom, a P-A-B-X subscriber, during a routine checkup call. Prospects are invited to visit existing installations such as this. "On such occasions," Mr. Corning says, "our P-A-B-X users tend to be our best sales boosters."

Mr. Corning regularly scans the local newspapers, notes new industries, and then contacts them. If the sale is not completed during the initial interview, a follow-up sales letter is sent "to verify monthly charges and contractural requirements." Says Mr. Corning: "We have found this letter particularly effective."

Inquiries for P-A-B-X service draw a quick personal visit.

Carolina Telephone and Telegraph Company operates 110 exchanges and 186 P-A-B-X's.

Follow the lead of these progressive telephone men. Start promoting P-A-B-X today. Ask for our helpful sales kit and *quick delivery schedules* on stock P-A-B-X switchboards!

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems

Makers of Telephone, Signaling and Communication Apparatus • Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: AUTOMATIC ELECTRIC SALES CORPORATION
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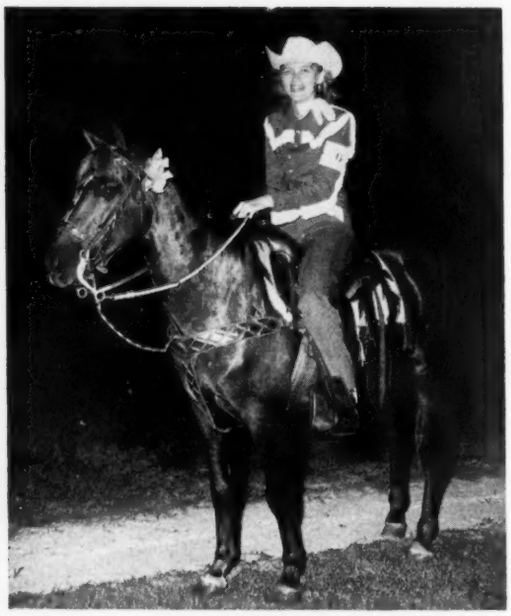
Independent Operator Stars in Uruguayan Festival



This photo helped the Peninsular operator win South American trip, along with six other riding experts from the United States.

Becky Freeman and her gaucho escorts watch El Prado, a Uruguayan festival.

Here Becky shows a saddle bronc who's boss!

(EDITOR'S NOTE: This article, reprinted from Hello, employe magazine of the Peninsular Telephone Co., Tampa, Fla., perhaps does not illustrate the typical off duty endeavors of telephone workers—but it is not too unusual! The aplomb with which this operator approaches her pursuits—telephone or otherwise—is the outstanding characteristic that marks most telephone people, whether looking for a parking space or being entertained by a foreign government.)

IF YOU HAD happened to be in Montevideo, Uruguay, the week before Easter, probably you'd have seen Becky Freeman, a Peninsular company operator. If you hadn't run into her, you'd have certainly noticed her pictures in all the papers. It was there.

You couldn't have missed Becky, because she carried the United States flag on horseback into the stadium at Montevideo during the week-long "El Prado," a Uruguayan national event.

The event is a Gasparilla, Mardi Gras, and Fourth of July—all rolled into one, South American style. Dances, street parades, barbecues, and a daily rodeo at the stadium for a week were orders of the day. And a telephone operator from Florida, as honor guest, helping to cement U.S.-South American relations, was right in the center of the activities—with all expenses paid.

How Becky gained this honor is a story in itself. When she was nine she was given a pony and learned to ride him so well that she acquired a show horse and began entering the amateur class at horse shows.

Ribbons, trophies, and other awards soon followed for difficult feats on saddle broncs, in barrel races, and a cow-poke game known as Musical Chairs. With the help of her uncle, Becky learned trick riding, joined a saddle club, and set her sights on bigger game.

Her big "break" came at a Clearwater, Fla., horse show, when one of the professional riders in the Quadrille, a sort of square dance on horses, became ill.

Becky stepped right into her shoes and performed flawlessly. Later she turned professional and toured with a rodeo troupe throughout the South.

Several weeks before the Uruguayan celebration, and after she had compiled an enviable record in the horse ring, someone in her troupe suggested she might be eligible for consideration to go to Uruguay, along with six others from the United States, to appear in the El Prado, a major South American event. Becky forwarded her picture and record to the judges.

In a few days she had obtained a leave from Peninsular and was heading southward, ready for the equator-crossing hazing and her ride into the stadium, where she represented the United States. Holiday over, she returned to her Lakeland, Fla., long distance position, happy with her accomplishments.

But in the vein of a telephone career girl, she keeps an eye on the future, looking for new opportunities.

Maintenance Testing Equipment

By JOHN A. BRACKEN

AMONG THE MANY excellent types of ohmmeters now on the market, are instruments small and light enough to be carried in the pocket. Although the range of pocket-size ohmmeters may not be as broad as some others, the added convenience of their light weight and small size, make them a most convenient and useful instrument. They may be used for measuring the value of resistances, checking the continuity of circuits and for general testing purposes in a central office or a PBX. They also prove useful for field maintenance work on the outside plant and at customers' stations.

Owing to field maintenance work necessitating transporting the ohmmeter on a truck, up and down poles, etc., the instrument should be enclosed in a suitable protective case, similar to that shown in *Fig. 1*. "A" is the meter, "B" the leather case, "C" the leather strap for carrying the meter suspended from the shoulder when climbing, "D" the test cords and "E" the test clips.

Ohmmeters and similar instruments designed for making electrical measurements, generally are of delicate construction and liable to serious damage unless handled properly. Therefore, when an ohmmeter is used, certain important precautions should be exercised:

(1) An ohmmeter should be read as accurately as possible. To do this, it is necessary to observe carefully the value of each scale division, especially when the meter pointer is very close to either end of the scale. This happens when the measured resistance is very much greater or less than the internal resistance of the meter. When reading the meter, the tester should look directly down at the pointer to estimate accurately any fraction of a scale division involved.

(2) It should be kept in mind that the accuracy of an ohmmeter measurement depends upon:

(a) The design of the meter.
(b) Care taken in its construction.
(c) Quality of materials used.
(d) Adjustment of mechanical parts.
(e) Precision of factory calibration.
(f) Condition of the meter—operating battery.
(g) The size of the resistance to be measured.
(h) The conditions under which the measurement must be made.
(i) The degree of accuracy required for the result.
(j) Individual's skill in reading the meter pointer deflection across the scale correctly.

(3) Exceptional care should be taken to see that the ohmmeter is not subjected to rough handling. The moving element of most ohmmeters is pivoted on jeweled bearings. If the element is subjected to sudden jars or excessive vibration, this may result in injury to the ends of the pivots or bearings. This will cause excessive friction and thus destroy the sensitiveness of the instrument.

PART 73. The preceding article in this series appeared in the September 4 issue on page 26.

(4) Avoid connecting the ohmmeter to an energized circuit carrying either direct or alternating current. If this does occur, the meter will be seriously damaged due to a larger current flowing through it than the moving element will carry. For this same reason, if the instrument is a combined voltohmmeter, when it is used as a voltmeter, it should not be subjected to a higher EMF than is indicated upon its scale.

(5) All electrical connections for resistance measurements and testing purposes should be carefully made. If the connections are loose, dirty or corroded at binding posts, pin jacks or switches, it will add to the resistance of the device or circuit being tested. This extra resistance introduces errors in the ohmmeter reading, which may amount to several per cent. Consequently, all connections at the instrument should be clean, bright and very tight.

(6) Although the amount of current consumed by an ohmmeter itself in operation is so small as to be practically negligible, over a period of time, the meter-operating battery slowly loses its power, resulting in a drop in voltage.

Therefore, each time the ohmmeter is used (also when the value of the scale range is changed on multirange meters), short circuit the ohmmeter test cord clips and observe that full scale deflection is obtained. In this test, the meter pointer indicates zero ohms, since the resistance of the short circuit should be practically nil. If the meter pointer does not indicate zero ohms when the test cord clips are short circuited, due to depreciation in the battery EMF, the depreciation must be

(Please turn to page 44)

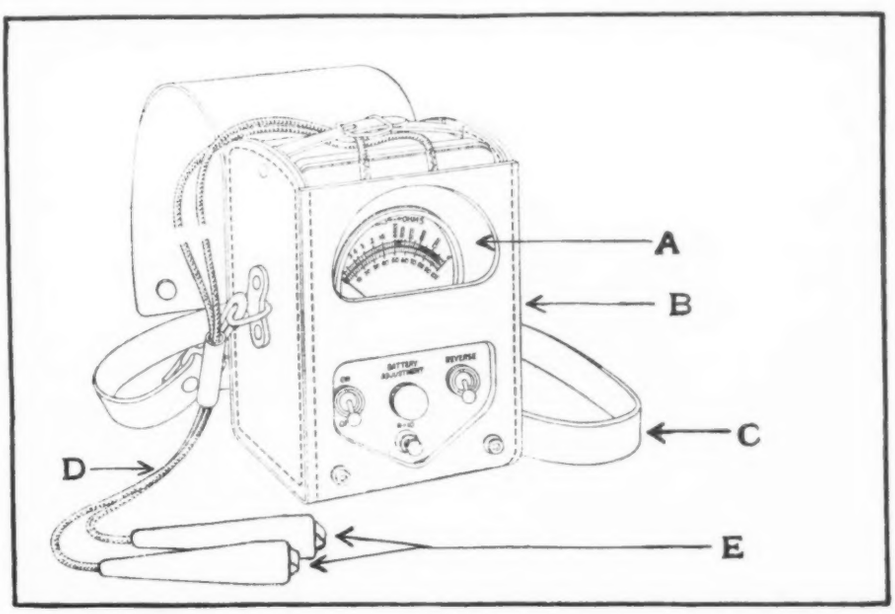
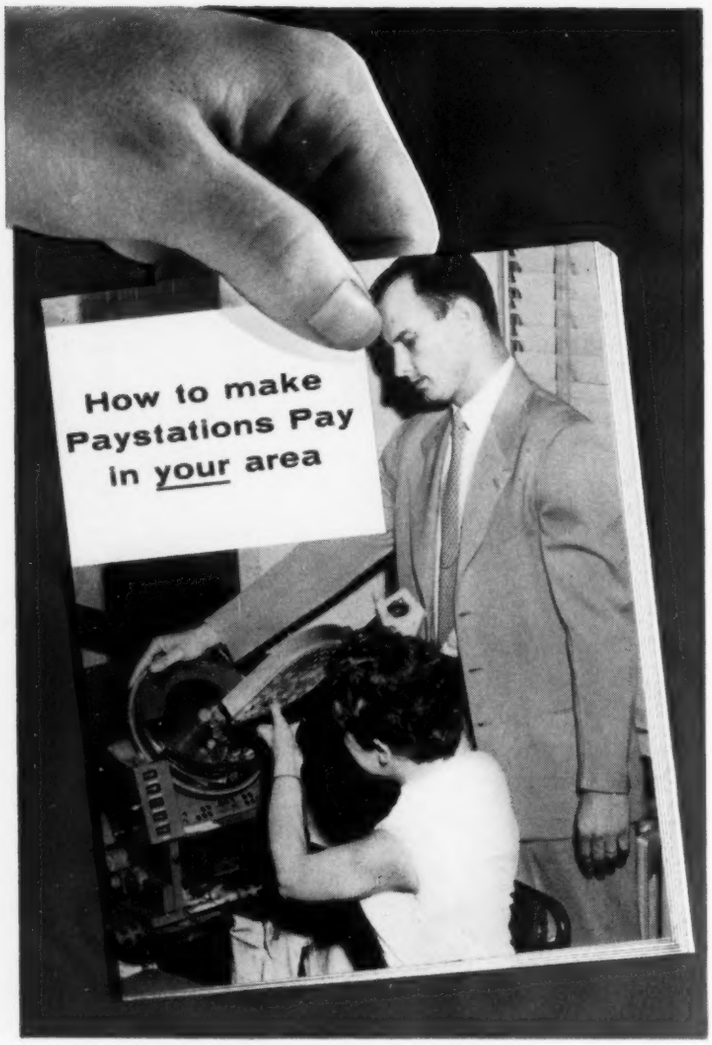


Fig. 1



New Book Shows Way

"...to the man who wants to get the most out of paystations"

This is not a catalog, not a circular. It's a serious, 44-page *book*, crammed with authoritative, helpful information on paystation business. Here's a note from the foreword:

"This book is intended as a handy guide to the telephone man who wants to get the most out of paystations. It contains a wealth of sound, practical, business-wise ideas . . . proved moneymakers in paystation development. Every aspect is covered—from tested methods for picking revenue-producing locations, to proved, efficient procedures for coin collection and accounting. Every suggestion, every idea, every method is field-tested—*proved* successful. They are taken from the actual experience of successful operating companies as noted on the bibliography page.

"The small-company telephone man who is just beginning to consider paystation development will find this book a valuable source of information. It will help him get started right and help him make each location pay rewardingly. The commercial manager . . . already well-established in paystation business will find it a handy refresher."

Be sure to get your copy in Automatic's paystation exhibit room at the USITA convention! (If you can't make the convention, write for Booklet T-1842. We'll gladly send you a copy.)

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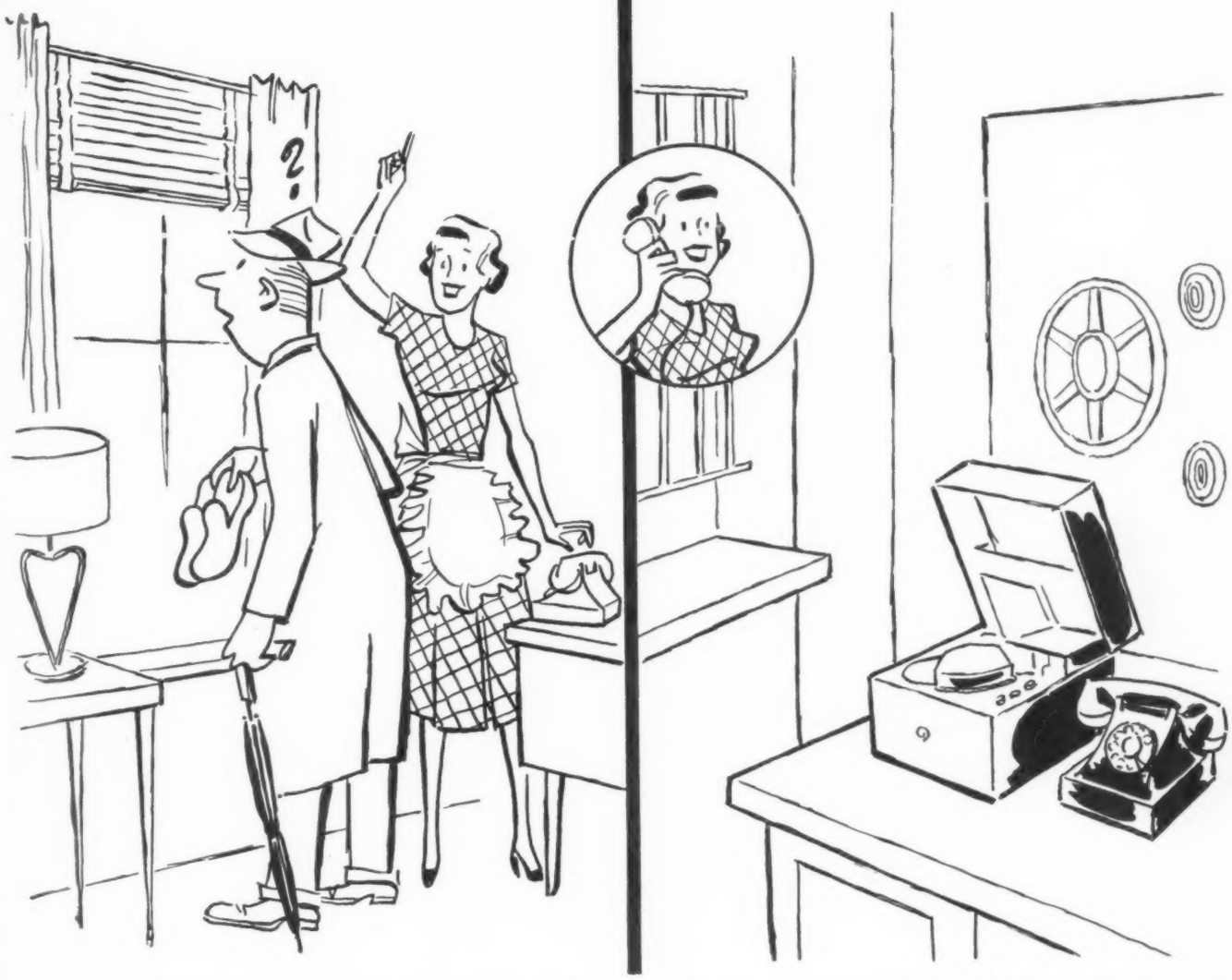
Wondering about the weather?... Just call the bank!



No matter what the weather, *people will talk about it!* And when that happens in our town, someone's bound to mention the National Bank. That's because of their new service—the Peatrophone Weather Forecast. You just dial your phone and get the latest report, and then a few words about the different advantages National offers you. Kind of a reminder that whether you carry an umbrella or not, every day is a good day to bank.

Peatrophone provides a real service—one you feel free to use without having to bother the radio station, the newspaper, the airport or even the weather bureau.

Bank officials are enthusiastic about Peatrophone's weather forecast too. It has made a lot of new friends for the National and it costs so little! Another trunk line, a few pennies a day for the Peatrophone rental, and a few minutes to record the daily or hourly weather report. A mighty small outlay for a new service that brings up the bank's name with appreciation, every time the weather is mentioned!

TELEPHONE COMPANIES: Have you considered the many ways Peatrophone can be used as a public relations builder for utilities, banks and stores? *And as a revenue builder for your company?*

Write today for complete information and literature on Peatrophone—your new source of revenue.

Note: Selective harmonic ringing subsets now available—all frequencies.

TELEPHONE ANSWERING & RECORDING CORP.
342 Madison Ave. New York 17, N. Y.

compensated for. This is customarily done by:

(1) Short circuiting the test cord clips.

(2) Rotating the battery adjustment knob on the front of the ohmmeter panel either in a "clockwise" or "counter clockwise" direction until the meter pointer indicates exactly zero ohms.

This is called "calibrating" the ohmmeter. This adjustment or regulation of the battery current flowing through the meter is necessary so that it will indicate the meter readings accurately. Failure to do this, generally results in an error in the measurement being made, especially if the operating voltage has decreased since the last time the ohmmeter was used.

(7) If when calibrating the ohmmeter, it is discovered that the meter pointer cannot be adjusted to indicate zero ohms, the battery should be replaced, providing of course that the meter or the test cords are not at fault. The operating battery of most portable type ohmmeters consists of one or more flashlight dry cells placed inside the instrument case. Removing certain screws from either the front or back of the meter, depending upon how it is constructed, permits the cover to be detached and gives access to the inside for replacement of the battery.

(8) When making ohmmeter resistance measurements, any contact between the fingers and the bare metal of the test cord clips should be avoided, especially if a high resistance is being measured, because the meter will not indicate the correct value of the resistance. Instead, a reading lower than the true value of a high resistance probably will be obtained.

This is due to the fact that the test cord clips are placed in "parallel" with the "ohmic" resistance of the human body. Under these circumstances the ohmmeter indicates the "equivalent resistance" of the resistor being measured, and the body resistance connected in parallel.

For this reason it is important to keep the fingers away from the metal part of the test clips, and also the uninsulated parts of the resistor or other device being tested.

(9) The ohmmeter test cords should be kept clean and dry. Also, badly frayed, worn or otherwise damaged cords should be replaced.

By keeping the ohmmeter in good condition, and using and handling it carefully, it should give dependable service for a very long period of time.

(To be continued)

Elementary Electricity Quiz

Below are five questions. Underline the word or words in parentheses you consider the right answer to each question.

(1) An electromagnet can be produced by inserting in a coil of wire a core composed of (wood) (silver) (soft iron) (zinc) (lead) (gold).

(2 The magnetic field of an electromagnet is made up of (the core) (air) (lines of force) (wire).

(3) The polarity of an electromagnet is affected by the (size of wire) (ohms) (direction of current through it) (composition of the core) (voltage).

(4) The difference between an electromagnet and a permanent magnet is due to (size) (magnetic strength) (construction) (weight) (size).

(5) The total lines of magnetic force which make up the field of an electromagnet are called (power) (ampere turns) (magnetic flux) (strength).

See correct answers on page 57.

EDNA AND CAROL

Concluded from page 30

workers who have shown such tireless devotion during this critical period.

"The hurricane has served to demonstrate the tremendous importance to all of us of the telephone and how handicapped we are without it. The magnificent job which the telephone company and its employes have performed in restoring service will long be remembered as one of the outstanding activities following the storm."

"Carol" and "Edna" Scoreboard

	"Carol"	*"Edna"*
Station Outages		
New England	250,000	240,000
Southern New England	38,000	25,000
New York	37,000	19,200
New Jersey	9,000	10,000
Total	334,000	294,200
Exchanges isolated	140	49
Toll circuit outages	2,000	2,600
Men borrowed from other companies for restoration	1,658	1,947

V V

Georgia Independent Sold

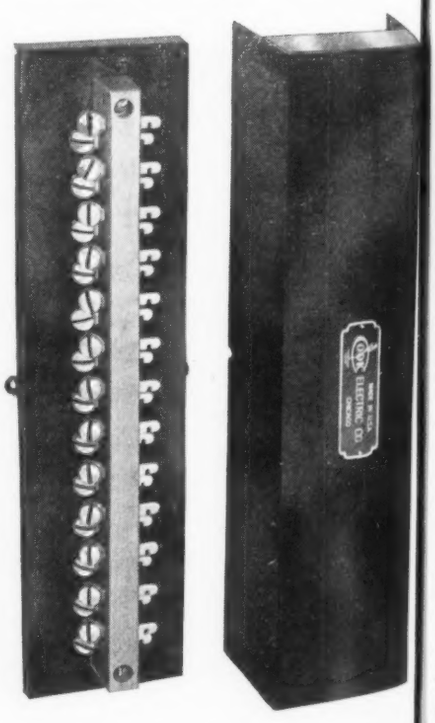
The Blakely (Ga.) Telephone Co. has been sold to Charles DeLoach, of Dothan, Ala., it was recently reported. Mr. DeLoach will operate the company. Former owner of the company was Mrs. Maude McCabe, deceased.

V V

One loses all the time which he can employ better.—ROUSSEAU.

Construction m
and C
WITH THE DOUBLE GU
STROMBERG-CARLSON AN
LEADING MA

cook's type 53
interior junction box



Designed for use in P.B.X. installations, in small unattended exchange and for the floor distribution of cable in factories, offices and stores where screw connections for drop wires are desired—with *economy*. Wooden base; enameled metal cover. Solder clips on Cable side; screw connections on drop side. Furnished in and 26 pair capacity.

Mfd. by Cook Electric Co.

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GUARANTEE OF
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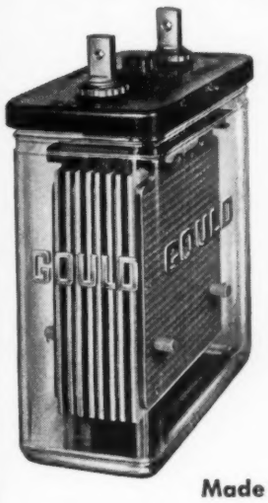
the battery that lasts practically forever



gould planté

For long life and uniform dependable service, no other telephone battery equals the Gould Planté. It has rolled up amazing performance records, remaining in active full-float service for 20 years, 30 years and longer!

In the Planté, *all* of each positive plate is pure lead, containing *no* antimonial impurities. Thus, Gould has eliminated the primary cause of self-discharge, capacity losses and shortened battery life. Planté batteries float at constant voltage and maintain rated capacity all their life. Because they almost never need service, maintenance is negligible. If you would cut battery costs to a minimum, choose Planté.

Made by GOULD-NATIONAL BATTERIES, INC.

for longer battery life and service...

the new RAYTHEON "high-rate" RectiChargeR!*

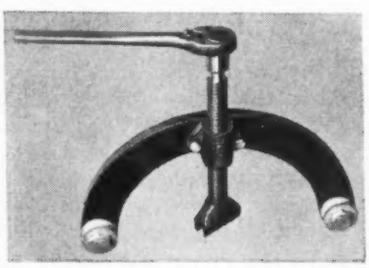
This constant potential battery charger like all Raytheon RectiChargeRs, is completely automatic. It has special dry disc rectifiers plus an exclusive Raytheon Magnetic Amplifier Control Circuit which maintains precise DC voltage output at any load in the presence of wide changes in AC input voltage . . . increases battery life by eliminating over and under charging.

It handles inexpensively all normal power requirements and allows the battery to "stand by" fully charged to meet all emergency demands. You get noiseless current at constant voltage by simple connections to a power outlet and your battery. It is ideally suited for use with systems requiring power for 22/24 cells of battery.

*Reg. U. S. Pat. Off.

ratchet handle slack puller

made by Cable Spinning Equipment Co.



The same dependable Slack Puller, but with a ratchet added. This type of handle enables the operator to pull slack with the Little Giant Slack Puller, requiring even less effort than would be needed with the conventional model.

The correct tool for those who use the Puller day after day.

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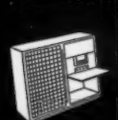
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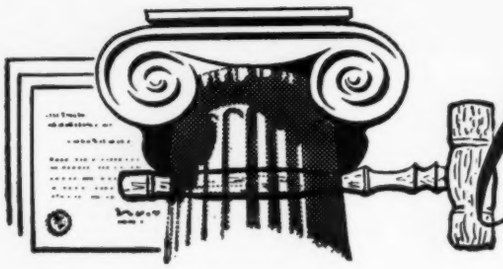


Courts and Commissions

Six Hearings Scheduled Before North Dakota Commission

The North Dakota Public Service Commission scheduled six hearings on telephone matters for Sept. 9-10. These included:

An application by the Edinburg & Garder Telephone Co., of Edinburg, for authority to increase its rates.

Application by the Polar Rural Telephone Mutual Aid Corp., Petersburg, for authority to construct and operate a telephone system, and for authority to purchase existing telephone properties now owned and operated by the Hunter (N. D.) Telephone Co.; Flem Telephone Co., Petersburg; Ryan Telephone Co., Inkster, and Dahlen (N. D.) Telephone Co.

Application by the same concern to make a $2,309,000 loan from the Rural Electrification Administration, and to establish a new schedule of rates and charges for the furnishing of automatic service.

Application by the United Telephone Mutual Aid Corp., Crary, for authority to construct and operate a telephone system in Cavalier County.

Application by the same concern to make a loan of $411,000 from the REA, and to establish a schedule of rates and charges in its Langdon exchange.

Application by the Grand Harbor Telephone Co. for authority to increase rates for telephone service furnished to non-members.

V V

Southern Bell Petitions for Rehearing on Rate Raise Plea

In filing a petition with the Kentucky Public Service Commission, on Sept. 20 for a rehearing of its plea for increased rates in the state (TELEPHONY, Sept. 18, p. 26), Southern Bell Telephone & Telegraph Co. contended it needs a rate raise twice as high as the $1,254,769 increase allowed by the commission in a Sept. 1 order.

Since the company originally applied for increases totaling $4,418,000, the rehearing petition was regarded as an attempt at a compromise of slightly more than half the original request.

The commission said in its Sept. 1 order that the $1,254,769 increase would give the company a 6 per cent return on its investment eventually. The company said in its rehearing petition, however, that it needs $1,324,181 more a year to yield the return the commission intended it to have.

The company said it needs $747,272 additional to produce a return of 6 per cent on its investment; $298,909 "to offset the depressing effect of high-cost construction for approximately 16 months from September 1, 1954," and $278,000 to absorb expense portion of pending wage increases to its employes.

The rehearing petition asserted that "uncontradicted evidence in the record" showed that the company's annual return in the first six months of 1954 declined from 5.20 to 4.69 per cent on intrastate investments. This decline, contended Southern Bell, was known to the commission, but no adjustment was made.

It was further contended in the petition that the rates granted were insufficient to enable the company to absorb the depressing effect on earnings of "an aggressive rural development program, make increases in employe compensation, and other expense adjustments" and "operate for a reasonable time in the future without seeking rate relief from the commission," as set out in the commission order.

Under Kentucky law, the commission has 20 days to act on the petition. If it takes no action within that time, the petition automatically is denied.

V V

Council Approves Rate Raise For Southwestern Bell

The Liberty (Tex.) City Council recently authorized a 13 per cent rate increase for Southwestern Bell Telephone Co., effective Jan. 6, 1955.

The new rates will increase one-party business service from $8.00 to $9.00, with one-party residence service going up from $4.25 to $5.00; two-party residence from $3.50 to $4.00 and four-party from $3.00 to $3.25.

V V

Wisconsin Rate Cases Scheduled

The Public Service Commission of Wisconsin, during the week of Oct. 4, was to have heard applications to increase rates from the Weyauwega Telephone Co., the Orfordville Telephone Co., and the Footville Telephone Co.

V V

General Files Rate Case in Texas Court to Obtain Raise

The General Telephone Co. of the Southwest, San Angelo, Tex., recently filed an application in the federal court at Tyler, Tex., for a preliminary injunction to restrain the city of Clarksville from interfering with a revision in telephone rates.

A hearing on this application was to have been held, and the Clarksville city attorney, Marion A. Lawson, was to have argued against the granting of such a request.

Mr. Lawson said at the time he had not been advised officially of the new rate schedule proposed by General Telephone for Clarksville. The matter had not been discussed before the city council, he reportedly stated.

Previous action of the company in gaining a rate increase was through the 102nd District Court at Clarksville, it was reported.

V V

Drop Suit in Arkansas over Back Rent for Use of Bridge

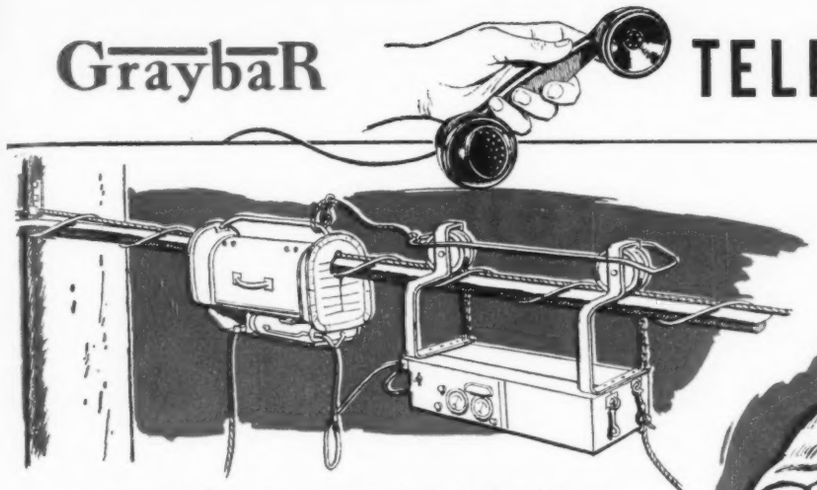
The suit filed in the name of Arkansas against two utilities and a telephone company (Southwestern Bell Telephone Co.) for about $500,000 in back "rent" for use of the Mississippi River bridge at Lake Village, Ark., was dismissed on Sept. 20 on petition of Attorney General Tom Gentry.

But, over Gentry's protest, Chancellor D. A. Bradham awarded a $25,000 attorney fee against the Tennessee Gas Transmission Co. for Ovid T. Switzer of Crossett, Ark., who brought the suit.

The action took place at Lake Village in Chicot Chancery Court where Switzer had filed the action as a special assistant attorney general last January. Switzer acted under a contract signed by former Attorney General Ike Murry and former Governor Sid McMath.

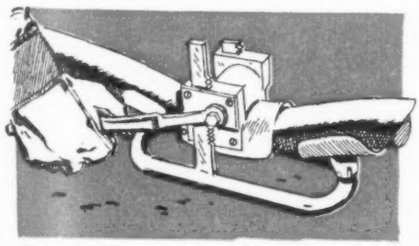
The dismissal was with prejudice—meaning that the issue could not be revived again. Gentry's action in requesting the dismissal was part of a

GraybaR TELEPHONE NEWS



FAST-MOVING ELECTRONIC BLOODHOUND SNIFFS OUT CABLE TROUBLE

Pulled along an aerial cable at 120 feet per minute, the General Machine Products B Leak Locator can "sniff" a gas leak of as little as 1/100 of a cubic foot per day. Freon gas is let into the cable sheath, replacing the nitrogen with which it is normally filled. Lineman then mounts "Sniffer" unit on the cable, together with its trailing control section and power supply. As it glides along the cable, blowers draw in air. If Freon is present, it actuates a bell and a milliammeter. The Locator is so speedy that it cuts the cost of leak detection to 1/3 that with other methods!



ASK GRAYBAR FOR COMPLETE GMPCO CATALOG...

Graybar distributes the complete line of GMPCO tools and accessories needed for fast efficient cable work – mandrels, duct cleaners, pickups, grapples, and feeders. But one of the biggest time savers is this GMPCO cable bender. Easy to use in restricted manholes, it makes compound bends in lead cable up to 3" without damage . . . multiplies 100 lbs. of handle pressure 20 times.

IT TAKES LESS "BEEF" WITH GREASE

Cables slide into conduits a lot more easily when they have been given a coat of GMPCO cable lubricant. The lubricant is available in 5-gallon cans in two types, one for lead-sheathed cable, the other for plastic-jacketed cables.

SAFETY FLASH

Minimize the hazard of open manholes with this GMPCO flashing signal and stand. Powered by a portable storage battery, this sturdy signal flashes a constant impossible-to-miss warning to pedestrians and vehicular traffic. For prices and information on this and any other telephone needs, call your local Graybar Representative – he will be glad to assist you.

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Call Graybar first for...

GRAYBAR ELECTRIC CO., INC.
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IN OVER 110 PRINCIPAL CITIES

gentlemen's agreement with the state of Mississippi and the city of Greenville under which Mississippi appropriated one million dollars for a Mississippi River bridge near Helena.

Gentry said no fee was assessed against the state in the case and that the fee to Switzer was fixed by Chancellor Bradham after witnesses were heard detailing the amount of preparation Switzer had done on the suit.

Switzer brought the action in the name of the state and the city of Lake Village. It was designed to force the Arkansas Power & Light Co., the Tennessee Gas Transmission Co. and Southwestern Bell to pay an estimated $500,000 in back rent for use of the Arkansas half of the bridge to carry power lines, telephone wires and gas pipelines across the river.

V V

Asks North Carolina Commission For Stock Issue Approval

Lee Telephone Co., Martinsville, Va., asked the North Carolina Utilities Commission on Sept. 28 for permission to sell $600,000 worth of first mortgage bonds in order to finance construction and pay off certain short-term debts.

The company, which operates North Carolina exchanges at Madison, Stoneville, Walkertown and Walnut Cove, said the bonds would carry 3.5 per cent interest and would be taken by Connecticut Mutual Life Insurance Co., Hartford, Conn.

V V

New York Company Granted Raises for New Dial Service

The New York Public Service Commission has allowed Delaware Telephone Co., Walton, to increase rates to subscribers served by its Walton exchange, and on one-party business lines in the Roscoe and Downsville exchanges, effective Oct. 1 (TELEPHONY, Oct. 2, p. 38).

The Delaware company serves about 2,900 telephone stations in the three communities in Delaware and Sullivan counties. The commission noted that during the last week in September the company completed modernization of its plant and conversion of its largest exchange, Walton, to automatic operation. The other two exchanges were so converted in 1950.

In filing the new tariff, the company reported that plant investment has increased from $612,000 at the end of 1951, to $1,085,000, and that additional revenues are required to continue adequate service. It is estimated the new rates will produce about $9,700 additional annual revenue.

A comparison of old and new rates is as follows: Walton exchange, one-party residence, increased from $4.00 to $4.75; five-party residence, replacing prior two and four-party lines, new rate $3.60; and 10-party rural, from $3.00 to $3.60. One-party business, increased from $5.25 to $6.25; five-party, replacing prior two and four-party lines, new rate $5.50; and 10-party rural, from $4.00 to $4.50. Downsville and Roscoe exchanges, one-party business, increased from $5.00 to $5.25.

* * *

Cut-over to new automatic equipment by the Delaware Telephone Co., Walton, N. Y., was accomplished on Sept. 26. The conversion drew considerable publicity from the local Walton *Reporter*—stories on improved toll service, sources of financing (bonds sold locally and to Metropolitan Life Insurance Co., and a short-term loan from Chase National Bank of New York City), and plant changes.

The *Reporter* devoted a special 16-page section of the newspaper to the event. In addition to the stories, it included advertising by local merchants and suppliers of telephone equipment.

The Delaware company management is composed of Mrs. Cordelia Haverly, president; J. B. Cantwell, vice president, and J. C. Burrhus, secretary-treasurer.

V V

North Carolina Independent Granted Rate Raise

Eastern Rowan Telephone Co., Granite Quarry, was authorized by the North Carolina Utilities Commission on Sept. 30 to increase its rates $10,000 a year, the commission finding the company needed a return of 4.25 per cent on a rate base of $478,000 (TELEPHONY, Aug. 7, p. 32).

The company has approximately 1,456 subscribers. It operates a dial central office at Crescent, near the town of Rockwell, serving Faith, Granite Quarry, Rockwell, and Gold Hill.

In its order, the commission noted that the company's average net investment on June 30 was $464,926.98, and that its earnings on that figure came to only 2.88 per cent.

The new exchange rates for business subscribers were set at $9.80 for one-party service, $7.80 for two-party, $6.60 for four-party and $5.50 for multi-party.

Residence rates were raised to $5.10 for one-party service, $4.25 for two-party, $3.60 for four-party and for multi-party.

In its order, the commission said that under conditions associated with

Construction m
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WITH THE DOUBLE
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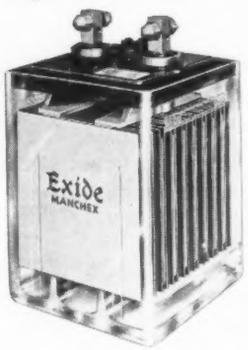
Exide-Manchex
telephone batteries



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the tool and the sleeve that are made to work together

Together they make the perfect splice—good for the life of the wire—fastest and simplest way to a perfect job.

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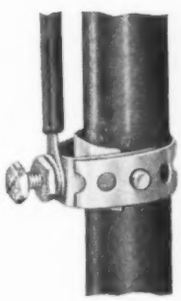
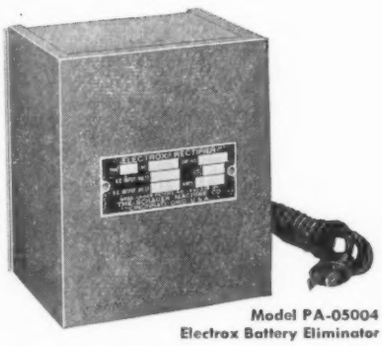
• • • for all telephone, radio and signal circuit station grounds. Design principles of this clamp are field-proved to maintain high pressure contact and maximum conductivity to joint.



Station Ground Clamps are adjustable for grounding to water pipe

"RELIABLE" IDENTIFIES THE QUALITY

24-hour guaranteed direct current, with electrox battery eliminator



Model PA-05004
Electrox Battery Eliminator

Designed specifically for the Operator's Circuit on Magneto Switchboards, the PA-05004 type illustrated guarantees current even if your AC fails!

When operating from 110 volt, 60 cycle lighting circuit, it delivers a constant, humless direct current. If the alternating current supply fails, a built-in Power-off Relay automatically transfers the operator's circuit to stand-by dry cells.

Other models available for Lamp Signal (PBX) and Automatic (PAX) systems. Products of Rectifier Division, Schauer Manufacturing Corp.

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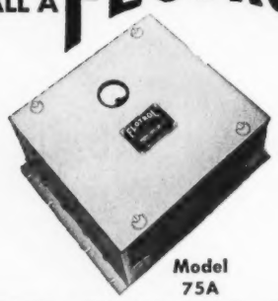
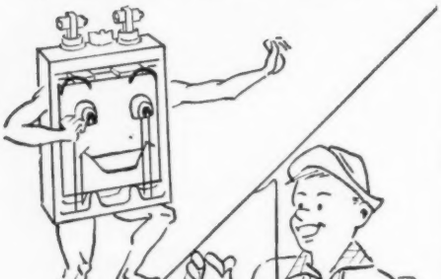


Model 75A

THEY'LL ENJOY THE REST



AND SO WILL YOU

FLOTROL has no moving parts, requires no routine maintenance or adjustment; it supplies the load current as you need it, doesn't wait for the load to pull the battery down and then recharge the battery. Result—longer battery life, less power consumption, fully charged batteries all the time, and scores of maintenance man-hours saved yearly.

Single-phase models from 1/2 ampere to 24 amperes, described in Bulletin 160.

Three-phase models from 25 amperes to 200 amperes, described in Bulletin 161.

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FLOTROL
PARTNERS IN DEPENDABILITY
SUB-CYCLE

the company's operations, it considered a 4.25 per cent to be a fair return on its investment.

In determining the fair value of the company's plant, the commission, its order said, observed that a company consultant had testified that the net investment was "fairly representative" of the fair value of the company properties. The order observed that the company witness had shown the company had $60,000 in equity capital, a surplus deficit of more than $37,000 and debts of $432,717 borrowed from the REA's telephone loan program and approximately $13,000 borrowed by stockholders from neighboring banks.

"Due to the sources of financing upon which this company is founded, the relationship between debt capital and equity capital approaches 95 per cent," the commission said.

"In determining a reasonable rate of return on the fair value of the property . . . the probable earning capacity of the property under the particular rates proposed and the sum required to meet all expenses, including the servicing of its capital structure, must, therefore, be considered."

When all the factors are added and needs determined, the company, the order said, needs an additional $10,000 in gross revenues for a net annual income of $20,300. This $20,300, applied to a rate base of $478,000, would provide a rate of return of 4.25 per cent, the order said.

V V

Rate Increases Authorized for Two Companies in Minnesota

Increase in rates for two Independents were approved on Sept. 27 by the Minnesota Railroad & Warehouse Commission. New schedules are to apply at the Iona exchange of the Central Telephone Co., La Crosse, Wis., and at five exchanges of the Wabasha County Telephone Co., Plainview.

The commission found that 99 of the Central company's 103 subscribers at Iona (43 local and 60 rural magneto), and six nonsubscribers, had signed a petition requesting installation of dial service at the following schedule of rates:

One-party business	$5.60
Two-party business	4.85
Rural multi-party business	5.00
One-party residence	3.90
Two-party residence	3.25
Rural multi-party residence	3.85

The commission approved these rates for use when the conversion to dial service is completed. It was estimated operating revenues would increase from $6,234 under present rates to $6,746 under automatic operation; and a net deficit of $16 would become net income of $1,748, which on an original cost of plant and automatic equipment of $28,190 would be a 6.2 per cent return.

For the five exchanges of the Wabasha County company, the commission authorized increases in operating revenues from the present $119,098 to $127,700 under the new rates. Net income would rise from $25,111 to $26,968, a 5.77 per cent return on an original cost of plant and equipment of $467,465.

Another schedule of rates, to be applied when the Wabasha company converts its Plainview exchange to automatic operation, would raise operating revenues to $128,875 and net income to $30,376, a 5.31 per cent return on an original cost of plant and equipment of $571,656.

From its five exchanges, the company serves approximately 1,139 local, 1,127 rural and 17 switching stations.

V V

Commission Refuses to Rehear New York Bell Rate Plea

Commenting on Oct. 1 on the New York Public Service Commission's refusal to rehear the New York Telephone Co.'s application for higher rates (TELEPHONY, Sept. 11, p. 42), President Keith S. McHugh said:

"I repeat that the commission's decision is bad for the company and in the long run bad for telephone users. Clearly, good telephone service goes hand-in-hand with the company's financial safety. Our credit must be tops if the company is to continue expanding and improving service at the rate of 185 million dollars annually.

"So far this year we have failed to earn our regular dividend by 2¼ million dollars. Our costs are still increasing at a faster rate than our revenues.

"We are restudying the situation to determine what steps remain to obtain the added revenues we need."

V V

Nebraska Independent Asks Permission to Increase Rates

The Coleridge Telephone Co. has asked the Nebraska Railway Commission for permission to increase its rates.

It has also asked authority to discontinue the 25-cent discount for prompt payment of monthly bills.

V V

Kentucky Company Asks Rate OK

The Thacker-Grigsby Telephone Co., Leburn, has requested permission from the Kentucky Public Service Commis-

sion to increase telephone rates by about $2,500 annually, it was recently reported.

V V

Announce Gary Group Changes in Accounting Personnel

Announcement has been made of three recent transfers between companies of the Gary Group involving accounting personnel.

Byron A. James, auditor, Nebraska Continental Telephone Co., was transferred recently to the Illinois Telephone Co. with headquarters at Bloomington, where he assumes the position of accounting supervisor.

Herman M. Waller, auditor, Georgia Continental Telephone Co., assumed the position vacated by Mr. James, and will be located at Columbus, Neb.

Morrison B. Haithcock, plant accounting supervisor of the Durham (N. C.) Telephone Co., recently became auditor for the Georgia Continental company, with headquarters at Monroe.

Mr. James has pursued a career in accounting beginning in 1926. He joined the Gary Group in 1946 when he became assistant auditor for the Ohio Consolidated Telephone Co., Portsmouth.

Mr. Waller joined the Gary Group via the accounting division of the Community Telephone Co. of Wisconsin. He has been with the group since 1947 and with Georgia Continental Telephone Co., from which company he is now being transferred, since 1951.

Mr. Haithcock joined the accounting division of The Durham company in August, 1947, and has been employed continuously by that company since then.

V V

Oregon Company with Operating Deficit Gets Rate Raise

The Halsey Telephone Co. was granted a gross revenue increase of $2,431.20 on Sept. 27, following a hearing before the Public Utilities Commissioner of Oregon.

The commissioner noted in his order that for the eight-month period ending May 31, the company had experienced a deficit in net earnings of $854.43.

V V

"It has long been recognized among economists that the price of a growing and dynamic business world is occasional adjustment to bring the assignment of productive resources into alignment with the pattern of wants, and to spur the achievement of greater efficiency on the part of individual business operations." — COURTNEY C. BROWN, *dean, Graduate School of Business, Columbia University.*

1500 pounds

MINIMUM COMPRESSION RESISTANCE OF

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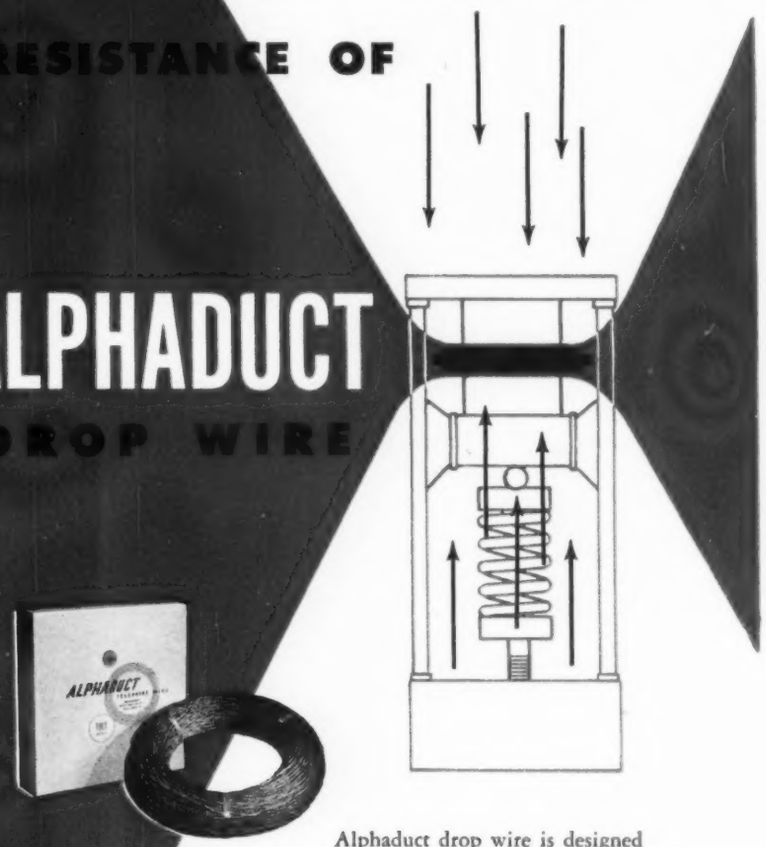
DROP WIRE



Alphaduct drop wire is designed and built to be the longest lasting drop wire you've ever installed. It's tested . . . completely, thoroughly and often to make sure that every single coil is up to Alphaduct's rigid standards.

Here's how the insulation is tested to make sure it won't crush.

Short lengths of Alphaduct are placed between the steel plates of a compression testing machine. These plates are then forced together at uniform speed until the insulation crushes. Alphaduct parallel drop wire has to withstand a minimum load of 1500 pounds before it breaks. Each conductor of Alphaduct twisted pair will withstand a 1000 pound pressure.

You don't have to worry about a little rough handling breaking down this kind of tested insulation. Try Alphaduct drop wire. It's dated, so you can see for yourself the extra wear it provides.

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THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

Answers to Traffic Questions On Page 23

(1) The operator should tell the calling party when she will make the next attempt, based upon her judgment.

(2) No, this practice has been discontinued. The second ticket should be scratched.

(3) The operator should hold such tickets until a request to try the call or a WH report is received.

(4) No. This practice has been discontinued.

(5) This action should be taken before making a subsequent attempt on any call on which word has been left or in any case where 30 minutes or more have elapsed since the last report was given to or received from the calling telephone.

Power will intoxicate the best hearts, as wine the strongest heads. No man is wise enough, nor good enough to be trusted with unlimited power.—COLTON.

The Jacksonville exchange of the Illinois Telephone Co., which has grown to 8,000 stations, will be converted to automatic operation next year. First earth recently was turned, as construction of the new building was begun, by J. F. Van de Vusse, of Bloomington, president of the company, and Mayor Ernest L. Hoagland. Pictured at the ground-breaking ceremony are (left to right) JOHN G. PRICKETT, secretary of the chamber of commerce; Mayor HOAGLAND; Mr. VAN DE VUSSE; WILLIAM O. RANDALL, district manager of the telephone company; DEAN HILFINGER, Bloomington architect, and HUGH GIBSON, of Jacksonville, general contractor. The overall cost of the conversion project will be approximately 1½ million dollars.

Cut overhead costs—

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FINEST ***AUTOMATIC REGULATED*** *TELEPHONE BATTERY CHARGERS...*

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INET Tele-Chargers are engineered to surpass critical requirements of the Telephone Industry.

Featuring Permanent Magnet Reference... finest magnetic amplifier controls and long-life selenium rectifiers provide the ultimate in dependable *automatic regulation* and maintenance-free performance.

Fully protected and conservatively rated—*cannot* be overloaded—exceptionally close voltage regulation—better than ± ¼% regardless of extreme AC line, wide load and frequency changes and variations in ambient temperature. Other outstanding characteristics are: Lightning-Fast Response—better than 0.1 second and Low Ripple—less than 0.5% RMS.

Compact, completely self-contained with all controls, circuit breakers and separate float and equalizer controls housed in modern heavy gauge steel cabinets. Units available with output ratings of 49 to 65 VDC at 0-50 to 0-1600 Amps.; 23 to 27 cells.

Write for complete engineering specifications.

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AIEE Meeting Includes Papers Of Interest to Telephone Field

The American Institute of Electrical Engineers, at its fall meeting at the Hotel Morrison, Chicago, will present papers of interest to the telephone industry.

On Oct. 13 F. H. Nolke of the Rural Electrification Administration, will present a paper on "Inter-Office Trunking and Signalling."

Also on Oct. 13 Imre Molnar of Automatic Electric Co., will present a paper on "Some Recent Advances in the Economy of Routing Calls in Nationwide Toll Dialing."

These two papers are in addition to two others scheduled for the morning of Oct. 14, "A Transatlantic Telephone Cable" by Mervin J. Kelly and others, and "Rural Automatization in the Swedish Telephone System" by B. Bjurel (TELEPHONY, Sept. 25, p. 76).

V V

Highest-Frequency Transistor So Far Claimed by Bell Labs

Bell Telephone Laboratories reports that it has a new experimental transistor that will operate higher frequencies than any yet developed. First uses, they predict, will be for submarine telephone and television cable repeaters, portable radio sets, transcontinental radio relay systems and military equipment.

Transistors are the tiny amplifying units, no bigger than the eraser on a lead pencil, that have been exciting the electronics industry by their ability to handle many of the jobs normally done by bulkier vacuum tubes.

Bell Laboratories reports that its latest transistor—still in the experimental stage—will operate at 440 million cycles, higher in frequency than any others known to date. The significance of this, Bell scientists claim, is that the time when the little devices can be used in a regular television set, for instance, instead of the usual array of vacuum tubes, has come a lot closer to reality.

One transistor problem so far, a Bell engineer explains, is that the mighty midgets haven't been usable with the high frequencies required for TV and FM radio. The new one, however, by generating 440 million cycles a second, has moved well into this ultra-high-frequency range.

Despite the fact that it will operate at such high frequencies, the new transistor requires no more power than others of its type, Bell says. That's about a fiftieth as much power as a regular flashlight uses, and less than a hundredth of that needed by a vacuum tube.

Bell officials are hazarding no guesses as to when the experimental unit will be ready for production.

V V

British Columbia Telephone Co. Sells $5,000,000 Stock Issue

A new five-million-dollar issue of British Columbia Telephone Co. 4½ per cent cumulative redeemable $100 par preferred stock was offered publicly and heavily over-subscribed the week of Sept. 13. Priced at par, the offering was made by a group headed by W. C. Pitfield & Co.

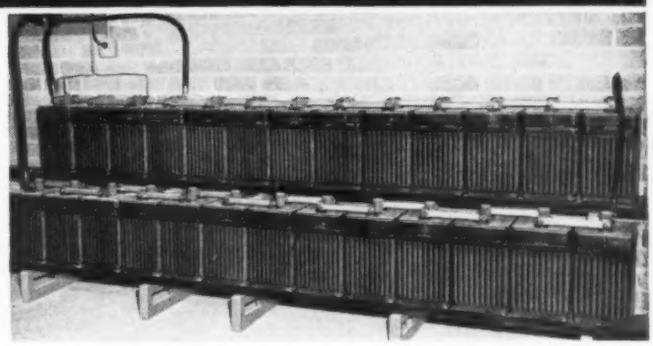
Proceeds will be used for plant extensions and general corporate purposes. B. C. Telephone has spent over 79 million dollars since 1945 on plant and equipment, and has a major construction program under way which involves additional central office buildings, extension of long distance and local facilities, and conversion from manual to automatic equipment. This year, it will spend about 19 million dollars.

V V

"Modern management, when unhampered by needless restrictions, has it within its power to influence the economic climate and to influence it for great national good." — WILLIAM J. MEINEL, chairman of the board, Federal Reserve Bank of Philadelphia.

At Southeast Nebraska Telephone Company

It's C&D Batteries for EXTRA life



New C&D Battery installation at Falls City, Nebraska. The Southeast Nebraska Telephone Company has a string of C&D PlastiCal (lead-calcium) cells here—capacity 540 A. H.

Just installed—but with a long, long life ahead—are these C&D PlastiCal Batteries for The Southeast Nebraska Telephone Company. Their job: to provide dependable, round-the-clock service for the busy Falls City area, an important town in the great Cornhusker State.

Like many telephone properties, Southeast Nebraska depends on C&D for reliability. The next time you order batteries, specify C&D. For with C&D you get:

1. **One-piece, permanently-sealed plastic case. Entire unit is shock-resistant... lighter and more compact than glass or rubber.**
2. **Elimination of sudden leaks due to internal stresses.**
3. **Easier maintenance, because patented Post Seal eliminates acid creepage.**
4. **Lower shipping costs. Light plastic case reduces total in-place cost.**

For C&D Batteries—consult your Equipment Supplier.

For details and specifications — write for Bulletins T-527 and T-528.

C&D

BATTERIES, INC.
of Conshohocken, Pa.
Manufacturers of Industrial Batteries since 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

The Consolidated Telephone Co., Florence, Ky., recently leased six trucks from Columbia Transportation Service, Inc., Cincinnati, O. Pictured above with the trucks are personnel of the Consolidated company, who are (left to right): G. B. FOSCUE, JR., general manager; ROBERT PLACKE, craft helper; WILLIAM STEGER, cable splicer; WILLIAM MOORE; repairman; ALFRED ARMSTRONG, repairman; WILLIAM O'HARA, installer; O. R. TANNER, foreman; GEORGE ROBINSON, craft helper; LLOYD HUFF, craft helper, and VINCENT KAUB and GLENN SMITH, both linemen. In the background is the company's new central office building in Florence, which houses automatic equipment.

AT&T Seeks UHF Link to Cuba To Permit TV Sending

American Telephone & Telegraph Co. has started proceedings before the Federal Communications Commission (FCC) looking toward transmission of United States television programs to Cuba, it was reported on Sept. 24. The company also wants to increase the telephone facilities between the two countries.

The plan involves the use of an ultra-high frequency point-to-point radio link between Florida and Cuba. AT&T electronics experts have found that by use of higher power and larger antennas, television transmission on a UHF circuit can be extended "over the horizon." A line of sight limitation that now applies to normal microwave transmission means repeater towers have to be erected about every 30 miles along such circuits. Experimental transmission up to 400 miles by the high-power method has been accomplished.

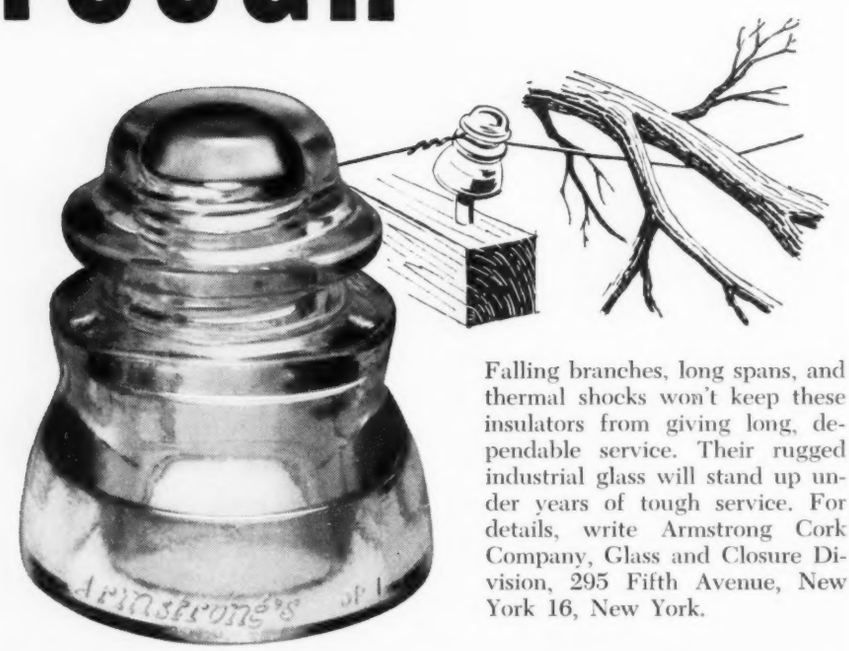
AT&T's initial application to the FCC is for a change in rules that would enable it to use UHF for the new project on a basis that would not interfere with other uses of that wave band in this country. If that is granted, the next step would be an application for assignment to frequencies under an experimental license.

The projected radio link would supplement existing telephone cables to Cuba, which cannot carry TV circuits. International Telephone & Telegraph Corp., which controls the telephone system in Cuba, owns these cables jointly with AT&T.

Both AT&T and IT&T say additional circuits to Cuba are needed to handle the growing traffic. Another cable, AT&T notes, would add only 36 telephone circuits, while the proposed radio link would provide for several times that number.

If AT&T gets FCC authority to go ahead with its project, IT&T's Cuban telephone subsidiary presumably would share in the enterprise by building a

TOUGH



Falling branches, long spans, and thermal shocks won't keep these insulators from giving long, dependable service. Their rugged industrial glass will stand up under years of tough service. For details, write Armstrong Cork Company, Glass and Closure Division, 295 Fifth Avenue, New York 16, New York.

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for communications . . . for power

tower to handle the Cuban end of the circuit and by providing facilities to connect it with the telephone system in the island.

V V

Leading Economists Write Book On Anti-Recession Policy

Various aspects of economic recessions and of policies to deal with them are examined in a book published on Sept. 1 by the Committee for Economic Development (CED), New York City.

The 161-page volume, "Problems in Anti-Recession Policy," presents 11 memoranda by outstanding business and university economists who prepared them for CED's Research and Policy Committee. They formed part of the background material used by the committee in the two-year study which resulted in its March statement on national policy, "Defense Against Recession: Policy for Greater Economic Stability." Papers included in the volume are:

"What Business Can Do to Prevent Recession," by Prof. Irwin Friend, University of Pennsylvania;

"Business Investment Policies," by Prof. Melvin G. de Chazeau, Cornell University;

"Retailing and Economic Stability," by Myron Silbert, vice president, Federated Department Stores;

"Marketing Services and Business Stability," by Wroe Alderson, Alderson & Sessions;

"Wages and Prices in Recession," by Edward S. Mason, Dean, Graduate School of Public Administration, Harvard University;

"Contracyclical Aspects of Private Residential Building," by Miles L. Colean, consulting economist and architect;

"Budget Policy to Maintain Stability," by Herbert Stein, Associate Director of Research, Committee for Economic Development;

"Unemployment Compensation as an Economic Stabilizer," by Orris C. Herfindahl, economist, Committee for Economic Development;

"Public Works and Economic Stabilization," by Robinson Newcomb, economic consultant;

"Stabilizing State and Local Finance," by Prof. Clarence Heer, University of North Carolina;

"Signals for Action to Prevent Recession," by Prof. Friend.

Copies of the "Problems in Anti-Recession Policy," priced at $1.00, are available from the Committee for Economic Development, 444 Madison Ave., New York 22, N. Y.

V V

If a man empties his purse into his head, no one can take it from him.—FRANKLIN.

HUBBARD SERVISLEEVS

Hot Galvanized

It takes only four or five seconds to slip the ServiSleev over the guy wire and drive it into place over the loose ends of the strand. No special tools are needed.

There is no damage to fingers; the installation is quick, neat, secure, permanent. Hubbard ServiSleevs are of unique patented design and are made of heavy galvanized steel that holds its shape and keeps its grip. They are universally used by the largest telephone companies. Available for all standard guy strand.

"Hang the Load on Hubbard Hardware!"

OVERHEAD

Cable Suspension Material—Wireholders Pole Seats and Balconies—Clevises Braces—Drive Hooks—Messenger Dead Ends—Extension Arms—Long Span Material—Pins—Clamps—Guards—Stubbing Bands—Guy Protectors—Guy Clamps Pole Struts—Clips—Straps—Hangers Carriage Bolts—Rings—Transposition Brackets—Eye Bolts—Pole, Corner and House Brackets—Guy Hooks—Strain Plates—Storm Guy Straps—Lags—Machine and Hubeye Bolts—Sidewalk Guys REA Telephone Hardware

UNDERGROUND

Cable Racks—Manhole Ladders and Steps Pulling-in Irons—Expanding Anchors Cable Shields—Screw Steelwing Anchors Anchor Rods—Ground Rods and Clamps

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If you want to tie a package securely you get this—

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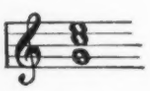

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IN THE NATION'S CAPITAL

Concluded from page 18

without telephones—in 10 counties of northeastern Florida.

Speaking of REA rural telephone loans, President Eisenhower is evidently proud of the progress being made along with REA's work in the rural electrification field. In a letter to REA Administrator Ancher Nelsen, from the summer White House in Denver, dated Sept. 28, President Eisenhower stated:

"Dear Ancher:

"I understand that some people are busily circulating statements to the effect that this administration is opposed to rural electrification programs and that these programs are to be drastically curtailed in the coming fiscal year. I am sure you recognize as I do that this is part of a general fear psychology now being adroitly generated in many fields by people who evidently have ends to serve that they consider more important than the truth. I am convinced that our rural population will not be misled by such reckless and irresponsible statements.

"For the record I should like to emphasize certain facts. During the past year, the progress of the REA has been exceptional. Our rural people know it. This progress has been evidenced in this past fiscal year by your speedier handling of loan applications. This will bring electric power to 170,000 additional farm families—almost 10 per cent more than in fiscal year 1953, and 33,000 more than in fiscal year 1952. *During the past fiscal year almost 75 million dollars in telephone loans were made as compared with 41 million dollars during the previous fiscal year.* The fact is that the backlog of both types of loan applications has been reduced to the lowest point since 1947. Moreover, industry cooperation in these programs which you have initiated has already reduced the cost of electric power to farmers in larger areas and markedly facilitated the extension of telephone service. Because these jobs in this past fiscal year were done at a substantial saving in administrative cost the accomplishment is even more impressive. . . ." (Italics supplied.)

V V

Name C. B. Diplock to Executive Post With Canadian Company

C. B. Diplock, vice president of the British Columbia Telephone Co., Vancouver, Canada, has been appointed to the newly created position of executive vice president of the North-west Telephone Co., Vancouver.

The new position has been created because of the increased administrative responsibilities in the rapidly expanding operations of the North-west company. Mr. Diplock will continue in his capacity as a vice president of the British Columbia company.

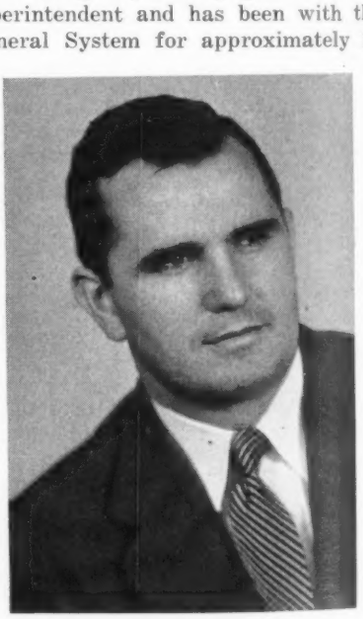
General Telephone of Kentucky Announces Organization Changes

The board of directors of General Telephone Co. of Kentucky, Lexington, at their regular meeting on Sept. 23 elected Samuel S. Long Jr. a director

S. S. LONG JR.

and vice president, effective Oct. 1. Mr. Long in his new capacity will be assigned the duties of vice president-operations.

Mr. Long is presently general traffic superintendent and has been with the General System for approximately 10



RAYMOND SOARD JR.

years. He is a graduate of Eastern State College, Ky., with a B.S. in mathematics.

Concurrently, Raymond Soard Jr. will be promoted from general traffic engineer to general traffic manager. Mr. Soard has been with the Kentucky company about 10 years and is a graduate of the University of Kentucky with a B.S. in electrical engineering.

A. W. Ryder Named Plant Head Of Ohio Consolidated

Allan W. Ryder, formerly vice president and general manager of the Pennsylvania Community Telephone Co., Bangor, Pa., has accepted the position, effective as of Sept. 16, of general plant superintendent of the Ohio Consolidated Telephone Co. and will be located

A. W. RYDER

at company headquarters in Portsmouth. Ohio Consolidated is an affiliate of the Gary Group companies.

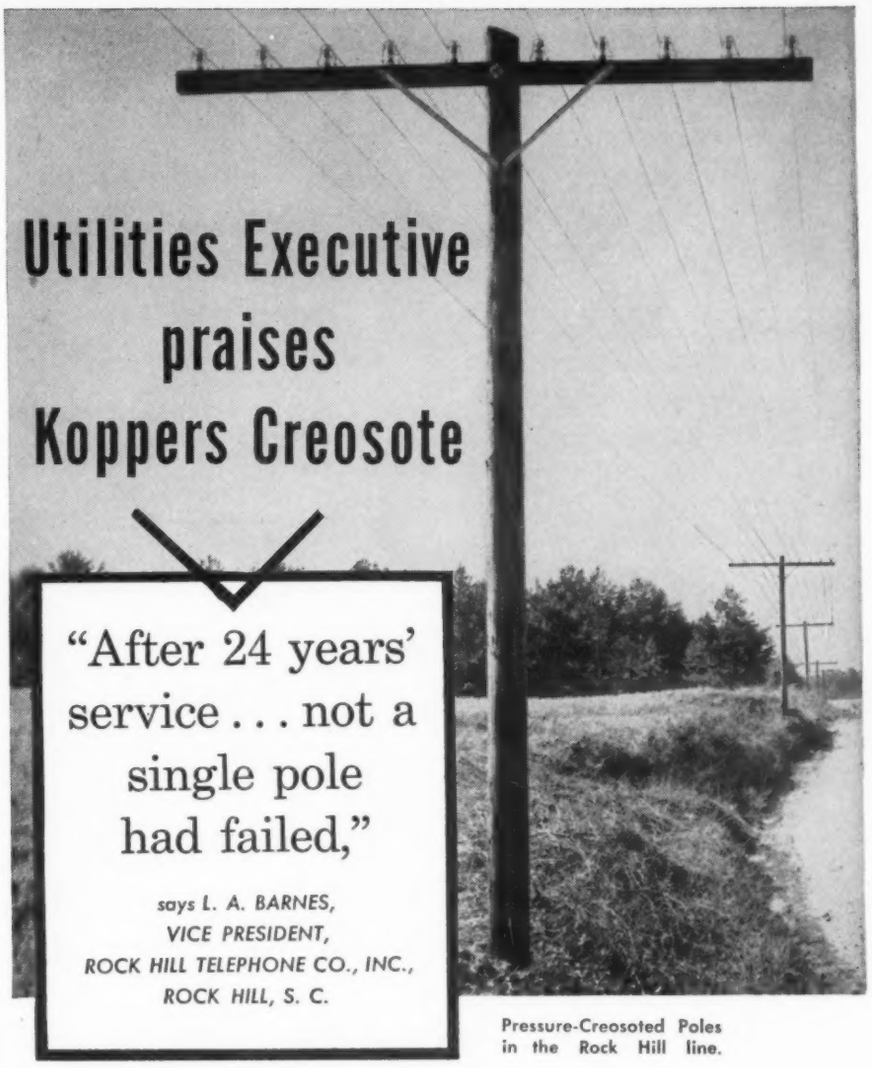
In his new position, Mr. Ryder directs all plant operations for the company, which serves over 50,000 stations. He succeeds W. T. Reichel, who is entering business for himself after a period of years in several companies of the Gary Group.

Mr. Ryder assumes his responsibilities with a varied background in the telephone industry. Following graduation from the University of Illinois in 1935, he was employed for a time by the Illinois Power Co. and the Western Electric Co., before joining the Gary Group as commercial representative in Clinton, Ill.

Since 1938, except for two years when he was executive secretary of the New York State Telephone Association, Mr. Ryder has been progressively employed in management positions with Gary Group companies, concerned with directing activities in all phases of the telephone business. Companies with

Answers to Questions On Page 44

(1) Soft iron.
(2) Lines of force.
(3) Direction of current through it.
(4) Construction.
(5) Magnetic Flux.


Utilities Executive praises Koppers Creosote
"After 24 years' service . . . not a single pole had failed,"
says L. A. BARNES, VICE PRESIDENT, ROCK HILL TELEPHONE CO., INC., ROCK HILL, S. C.

Pressure-Creosoted Poles in the Rock Hill line.

● Back in 1930, the Rock Hill Telephone Company purchased and erected, in their Rock Hill-Lancaster toll line, a quantity of poles, pressure-treated with Koppers Creosote. After 24 years' service an inspection made by the telephone company revealed that not a single pole had failed due to deterioration.

This is the kind of service utility companies are getting from poles treated with Koppers Creosote. To get this kind of quality and long life for your poles always insist on clean poles, pressure-treated with creosote—the proven preservative.

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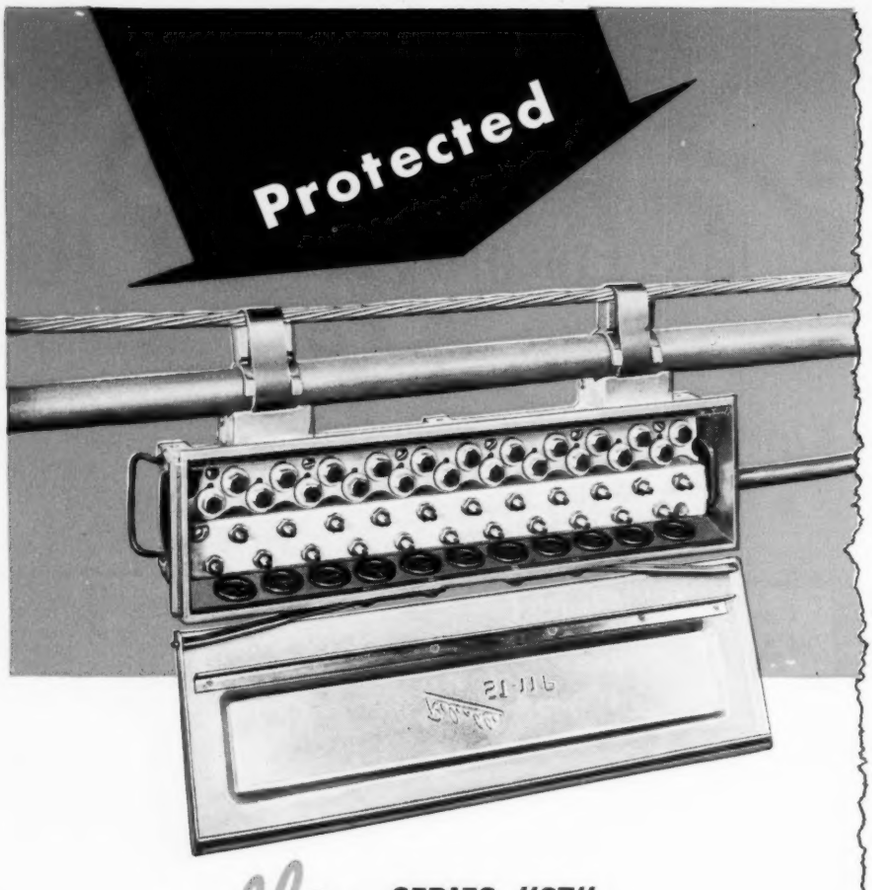


Reliable

SERIES "ST" CABLE TERMINALS

—for strand, pole or wall mounting

These new Reliable Cable Terminals, available in 11, 16 and 26 pair, present several important refinements for improved protection on which patents are pending.

The 11 and 16 pair terminals are chiefly designed for attachment to strand supported cable for plant flexibility and minimum damage hazard. Separate mounting brackets are available to permit vertical or horizontal mounting on buildings and poles.

The 26 pair terminal is designed for pole and wall mounting and is furnished with a suitable bracket. All three may be used in cable systems maintained under gas pressure.

The stub cable lead sheath or shield and the terminal housing *are bonded through the binding post block,* so they are at same potential.

Outstanding features of the "ST" Cable Terminal

1. One-screw mounting clamps (pat. pending) with snub tightening produce secure locking of the mounting straps — no loose parts.
2. Simple cover closure mechanism (pat. pending) and cover design provide weather-tight enclosure.
3. Bronze binding post terminal screws are molded in high dielectric low moisture absorbing material. Surface leakage between the wide spaced terminals is minimum. The specially molded cable head shells provide this superior insulation resistance.
4. The carbon protector blocks and the secondary metallic grounding elements are contained in a *threaded* housing to provide a moisture proof air gap. This assembly constitutes the Protector Unit (pat. pending).
5. Cable protection is not lost when cover is open.

Reliable **ELECTRIC COMPANY**

3145 Carroll Avenue, Chicago 12, Illinois

Over 45 Years Service to the Utilities

which he has been associated, in addition to Illinois Central Telephone Co. and Pennsylvania Community Telephone Co., include the Blue Mountain, Southern and Wiconisco telephone companies of Pennsylvania, and the Southern Continental Telephone Co. of Tennessee and Kentucky.

V V

OBITUARY

ALBERT E. STRONG, 71, oldest-in-service employe of Kellogg Switchboard & Supply Co., a division of International Telephone & Telegraph Corp., and a man well-known throughout the Independent industry, died suddenly on Sept. 24. Mr. Strong, who was in charge of special assignments for the works manager's office, had been with Kellogg 52 years.

Just five days following his death, Mr. Strong's widow, Greta Hodges Strong, passed away following a long illness. She, too, had been "with the telephone business" from early days. The daughter of the late Henry Hodges, owner of the Paola (Kan.) Telephone Co., she met Mr. Strong when he was installing Kellogg equipment for her father's company in 1908.

Mr. Strong began his career with the Kellogg company as an 18-year-old messenger boy-engineer trainee on Sept. 8, 1902. During his career, he served the company as plant superintendent, chief inspector and during the 20's and 30's served successively as foreman of the radio assembly, switchboard assembly, telephone assembly and coil winding departments. During World War II, he was one of the company's two general foremen.

In his early days with Kellogg, Mr. Strong served as installer throughout the United States and Canada. His interest in telephony actually began in the late 80's when his father, the late Albert L. Strong, installed the first local telephone system in his home town of Vail, Iowa. The "system" was a two-telephone one connecting the Strong General Merchandise store with the family home.

The Strongs are survived by one son, Albert H.

V V

General of Michigan Names Industrial Relations Head

L. H. Meyer, president of the General Telephone Co. of Michigan, has announced the appointment of William W. Gordinier as industrial relations director.

Mr. Gordinier was brought into the General System to organize and expand the personnel facilities and services in keeping with the company's rapid and continuing growth. He will administer

W. W. GORDINIER

the personnel activities from the company's headquarters in Muskegon, Mich.

He is a native of Albany, N. Y., and having received his early education there, attended the University of Michigan where he received a B.A. degree in economics.

Early in World War II, Mr. Gordinier enlisted in the Army Air Force, and after extensive training in communications and electronics was assigned to the Eighth Air Force as a radar technician.

Prior to his appointment with the General Telephone System, Mr. Gordinier was active in the personnel-industrial relations field in the steel and heavy machinery industries, having been associated with Allegheny Ludlum Steel and Joy Manufacturing Co., both of Pittsburgh, Pa. He left Joy Manufacturing to accept his present appointment in the General System Sept. 1.

V V

Emergency Call Blocked on Busy Party Line; Child Dies

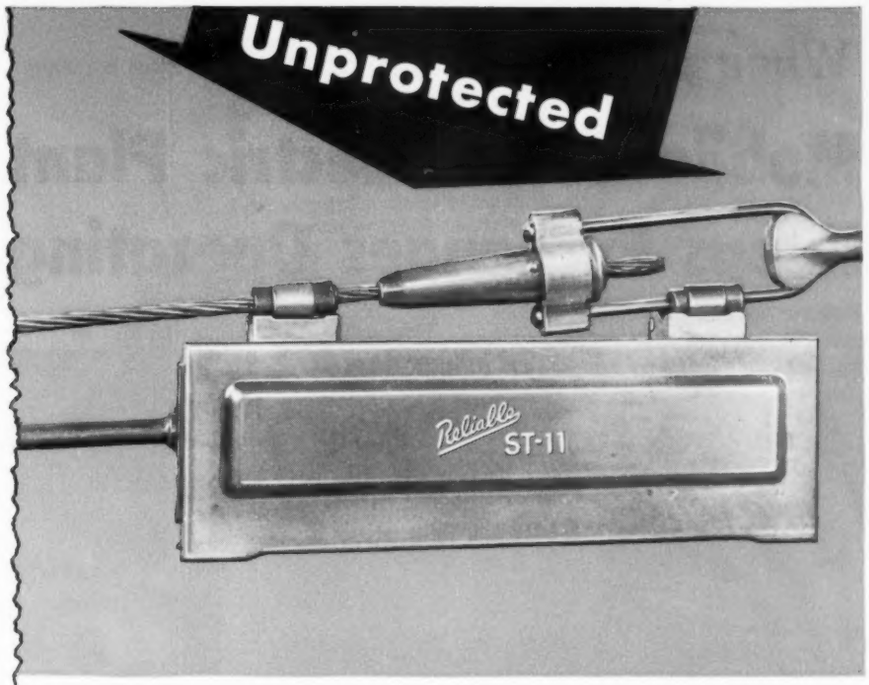
An Indianapolis, Ind., lady, Mrs. Oran Chastain said on Sept. 28 her child lay dying while callers on her telephone party line refused to allow her to summon aid.

The child, David Allen, three, died of meningitis minutes after the neighbors hung up after discussing a Parent-Teacher Association meeting, Mrs. Chastain said. She said she was refused use of the line four times in half an hour.

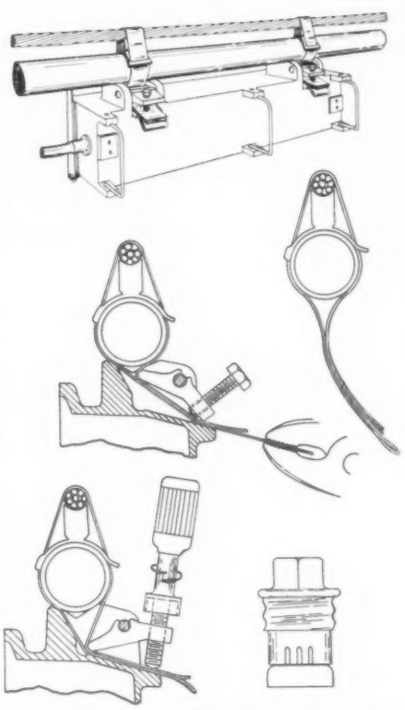
"I knew my son was very ill," Mrs. Chastain said. "I wanted a doctor desperately."

V V

"All of our possessions are as nothing compared to health, strength, and a clear conscience."—HOSEA BALLOU.



A complete specification is ready!



Reliable "ST" Cable Terminals for strand, pole and wall mounting employ reinforced cast resin binding post terminal blocks with a choice of lead sheathed or plastic jacketed cable stubs. The cast aluminum alloy housings of the 11 and 16 pair terminals are equipped with stub cable entrance holes at opposite ends for reversal of stubs. Stub entrance is sealed with a ring grommet; the opposite end with a solid grommet. The two entrances also provide practical means for connecting a plastic and a lead cable, where direct splicing is not desirable.

Protector Unit is a carbon gap arrester with secondary metallic grounding which grounds the line permanently when subjected to heavy currents.

Clearly illustrated procedures like the above are typical of R-100 specification.

Write for Specification R-100. It illustrates and describes in full detail the Suggested Plant Practices for installation of these 11, 16 and 26 pair terminals.

Reliable ELECTRIC COMPANY

3145 Carroll Avenue, Chicago 12, Illinois

Over 45 Years Service to the Utilities

When power is interrupted—

Mobile ONAN Electric Plant Keeps Exchanges Operating

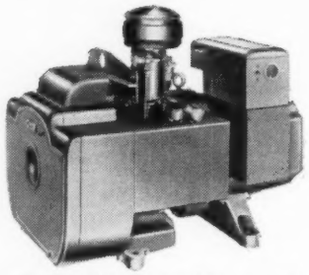
This trailer-mounted 25,000-watt Onan Electric Plant is one of a fleet of 20 owned by the Northwestern Bell Telephone Company in Minneapolis. These units are kept in a centrally-located garage and when an outlying exchange is cut off from its regular source of electric power, one of these mobile electric plants is rushed to the spot. Within a few minutes it is hooked up and all essential equipment supplied with electricity.

For mobile applications such as this, as well as in permanent standby installations, Onan units can be depended upon when emergencies strike. Onan heavy-duty, 4-cycle engines start easily, run longer without attention, require less maintenance.

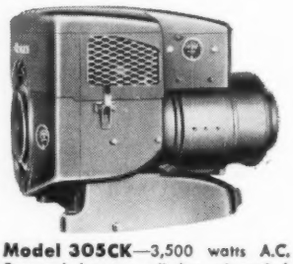
Onan Standby Plants are used by telephone, micro-wave and radio broadcasting companies from coast to coast to assure vital communications. If you have a standby power problem, let our engineers recommend the size and type electric plant you need.

ONAN STANDBY PLANTS: 1,000 to 50,000 watts A.C., gasoline-powered.

Write for Folder and Engineering Assistance



Model 5CW—Lightweight, compact. Powered by two-cylinder, air-cooled gasoline engine.



Model 305CK—3,500 watts A.C. Powered by two-cylinder, air-cooled gasoline engine.

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Onan ELECTRIC PLANTS

STANDBY POWER for every need, 1,000 to 50,000 watts

New Communications System for Subways Tried in New York

A new communications system that permits the motorman of a moving subway train to talk to his dispatcher's office was put in use experimentally on Oct. 1 on Flushing line of New York City's subway.

The system differs from that now in use on main line railroads as it employs the third, or power rail, to transmit a frequency-modulated carrier wave. Railroads use a micro-wave radio relay that is not dependent on continuous contact.

The device employs 600-volt alternating current lines that carry signals to points along the subway route. The lines are connected to the third rail by condensers. They permit passage of carrier waves, but do not allow the current to pass in either direction between the line and the third rail.

The signal waves pass from the line to the third rail, through the train's contact shoes, which also transmit current to the motors and into a loudspeaker in the motorman's cab.

The speaker can bring messages to the motorman from the dispatcher's office or carry messages from the motorman to the dispatcher. Under the system now in use, a motorman who has to report an emergency must stop his train at a wayside telephone and call for help or ask for instructions.

V V

". . . any government with strongly centralized power poses a threat to personal liberty. Each time we take another step toward socialism, government control and higher taxes in our own country, we should pause and think what life offers for the individual in countries where power is vested in the state, and government bureaucracy has been over expanded." — Lewistown (Pa.) SENTINEL.

BOOK REVIEW

"THE INSULATION OF ELECTRICAL EQUIPMENT," edited by Dr. Willis Jackson. 340 pages. Price, $7.75.

"The Insulation of Electrical Equipment" covers the subject with direct reference to the design, manufacture, and testing of electrical equipment.

Edited by Willis Jackson, the new book is the result of lectures at a post-graduate summer session held in the electrical engineering department of London's Imperial College. The 12 authorities who delivered these talks were especially concerned with design limitations and the best means for overcoming these limitations.

Listed in order, the chapter headings are:

"An Historical Survey of the Development of Electrical Insulation" by Willis Jackson.

"General Properties of Insulation in Relation to Its Structure" by C. G. Garton.

"Permittivity and Dielectric Loss" by L. Hartshorn.

"Dielectric Breakdown" by S. Whitehead.

"Classification and Review of Insulating Materials" by R. Snadow.

"Communication Components" by I. M. Ross.

"Power Cables and Capacitors" by L. G. Brazier and R. S. Vincent.

"Electrical Machines" by E. Jones.

"Power Transformers" by D. Macdonald.

"Switchgear" by P. G. Ashley.

"Insulation Testing in the Laboratory, Factory and Field" by J. S. Forrest.

Dr. Jackson, director of research and education with the Metropolitan Vickers Electrical Co. in England, was formerly professor of electrical engineering at the Imperial College.

This book may be purchased through TELEPHONY.

V V

Air Line Announces Telephone Service for Plane Passengers

Air-to-ground communications, in which Bell Laboratories was one of the pioneers, is now available to airplane passengers as well as the crew.

Bonanza Airlines, operating in Arizona, Nevada, and Southern California, has announced regular telephone service for its passengers. The coastal harbor station at San Pedro, Cal., supplies the necessary relay linkage with ground lines.

V V

Mind unemployed is mind unenjoyed. —BOVEE.

MIKE THE MOLE SAYS:

Give the GUY a CHANCE

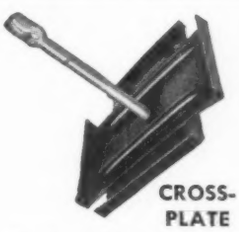
I get around... and I know that Chance Anchors really hold

YOU GET THE MOST FOR YOUR MONEY WITH CHANCE ANCHORS the most complete line

8-WAY EXPANDING
The guy load is distributed all around the anchor—no wasted space between blades. Usually installed in clay or loam.

NO-WRENCH SCREW
For hand or machine installation. Pitch-controlled blade goes down faster and adds to holding power in sandy soil, soft clay or loam.

NEVER-CREEP
Made of structural steel. Pulls *entirely* against solid, undisturbed earth. For extra heavy loads in clay or loam.

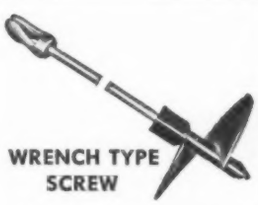


CROSS-PLATE
For heavy-duty anchoring in machine-bored holes. Holds better than logs or slugs. Saves time and money.

SWAMP SCREW
For swamps, marshes, quicksand, river crossings or seasonally flooded areas. Screws down deeply by adding sections of pipe.

8-WAY CONE
Acts as inverted wedge. Flaring base and flat faces increase wedging action. Used in rocky areas with rock wedging.

EXPANDING ROCK
No grouting necessary. The greater the pull, the tighter it wedges against solid rock. Set in 2" drilled hole.



WRENCH TYPE SCREW
All steel—double arc welded. Anchor hub absorbs installation strain. For light loads in sandy soil, soft clay or loam.

POLE KEY ANCHOR
Keys poles at the butt to reinforce them against unbalanced loads in soft soil. Ideal for congested urban areas.

Both the soil type and condition are important factors in determining the type of installation and the kind of anchors to use. That's why Chance Anchors are made in so many types and sizes. The anchors shown above are made in a wide variety of sizes. Each type is designed for certain soil and guying conditions. Each of these anchors will do its specific job better than any other anchor you can choose.

Protect your investment in line construction. Analyze your soil and guying conditions, and specify the Chance Anchors that meet your particular requirements.

There is a CHANCE Anchor Distributor in your area who can probably fill your order directly from stock.

SPECIFY CHANCE FOR SERVICE!

A·B·CHANCE CO·

CENTRALIA, MISSOURI
SAN FRANCISCO, CALIFORNIA

ABC INDUSTRIES

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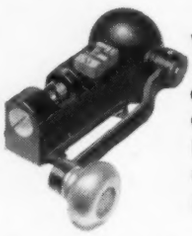
What Do You Want TO BUY?

What Do You Want TO PAY?

We Can Satisfy You Either Way!!

Here are three examples of our hundreds of bargains



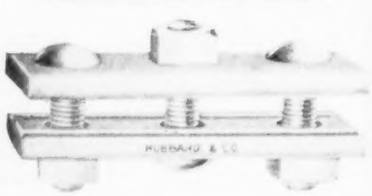
W.E. Co. #444A Switchboard Cord Terminal Crimping Tool. Brand New Signal Corps Surplus.

Regular Price $123.80. Our Bargain Special. Each.....$39.95

Buckingham "Stephens" Pole Climbers Brand S.C. Surplus, Complete with Straps and Pads. A $10.75 Value. Sizes 15½" and 16". Per Set $4.95
Size 16½" .. 3.95
The Above Without Straps or Pads Per Pair $2.19

Hubbard No. 7449 3 Bolt, 4" Guy Clamps for ¼" to 7/16" Strand, in Original Boxes of 50 Pieces. Weight, 188 Lbs. Per C. A $47.50 per C value.
Price Per Box.....$13.65
In Lots of 500, Per C..... 26.40

Double Check Your Saving



Come to the U.S.I.T.A. Convention. Go to Room 658A—Conrad Hilton Hotel. Ask for Jim. He Will Be Glad to Meet You.

•

LINE EQUIPMENT SALES
529 SOUTH DEARBORN STREET
CHICAGO 5, ILL.

The heart of the system. WELDON CASE (right), vice president and general manager of the Western Reserve Telephone Co., holds an XY recorder—the electro-mechanical brain of the XY toll ticketing equipment just installed at Hudson, Ohio. BAXTER CASE holds an XY switch, heart of the XY automatic exchange for Hudson which was cut over at the same time.

Ohio Independent Cuts in Customer Toll Dialing

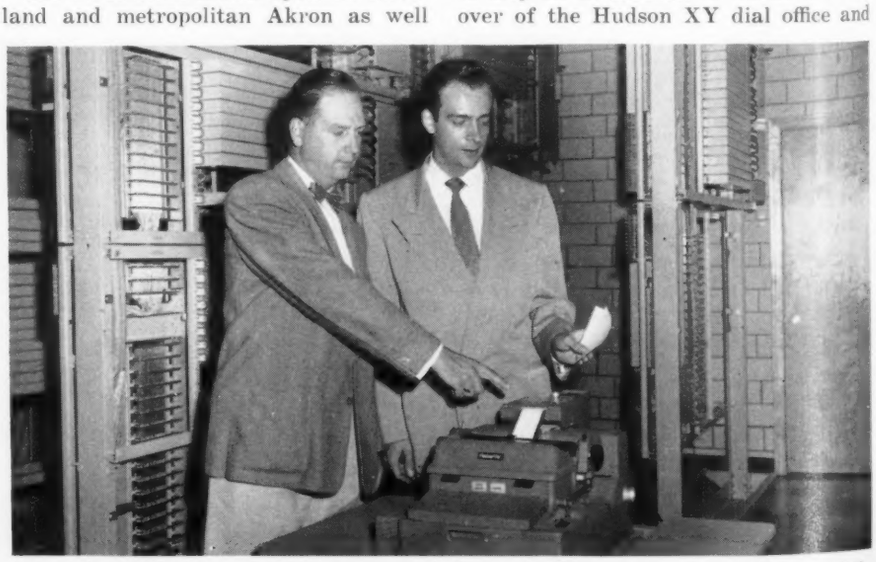
Once again it is an Independent telephone company that leads the way, as the first customer toll dialing system in the state of Ohio is cut into service by the Western Reserve Telephone Co., Hudson.

The XY toll ticketing network centered in Hudson brings to all subscribers in the local exchange area and those in suburban Russell immediate connection to a total of 102 exchanges in the Cleveland-Akron and suburban region of northeastern Ohio. At the time of the cut-over, the number of stations which could be dialed direct by subscribers of the Western Reserve Telephone Co. was a whopping 842,360 —which well may have established a new record for a single conversion.

All the stations in metropolitan Cleveland and metropolitan Akron as well as the principal suburbs of both cities are included in the subscriber toll area. While the present XY toll ticketing system now affords customer toll dialing only to residents of Hudson and Russell, the system was so designed that in the future all the other towns in the Western Reserve company service area will be included.

When the Ohio Bell Telephone Co. carries to completion its plans for subscriber toll dialing in the greater Cleveland area, the service now available to all Western Reserve Telephone Co. customers, on a one-way basis, will also be available to many of the metropolitan telephone users (those having single-party and two-party service).

Many Independent telephone executives, on their way to the USITA national convention in Chicago, planned to stop off at Hudson to watch the cut-over of the Hudson XY dial office and



NELSON (left) and TED CASE of the Western Reserve company, pick up printed XY toll tickets, ready for immediate use by the billing clerks. The printer is entirely self-operating, following a pre-determined schedule; letters and figures are produced from information recorded and stored electronically until needed.

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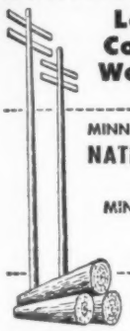
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the XY toll ticketing system. Also invited for the first night proceedings were the governor of Ohio, members of the Ohio Public Utilities Commission, and officials of the Ohio Bell Telephone Co.

A preview of the XY toll ticketing operation was given to the Ohio Independent Telephone Association president, Richard R. Waltz, Executive Secretary Daniel W. DeHayes and managers from the association's District 1 (northeast Ohio) during the recent district meeting at Aurora, O.

It is understood that other Independent telephone company executives plan to accept an open invitation of Mrs. Harry Case, president, and Weldon Case, vice president and general manager of the Western Reserve Telephone Co., to visit Hudson after the USITA convention.

V V

Approves Oregon-Washington Company Financing Plan

Financing plans of the Oregon-Washington Telephone Co., Hood River, were approved on Oct. 1 by the Oregon Public utilities Commissioner.

The commissioner authorized the company as follows:

To sell (after Oct. 1 and before Nov. 2) 1,000 shares of 5 per cent cumulative non-voting and non-participating first preferred stock, par value $100 per share, at a price of $100,000.

To sell (after Oct. 1 and before Nov. 2) to Connecticut Mutual Life Insurance Co. $700,000 of first mortgage bonds, due Sept. 1, 1979, bearing 4 per cent interest, and secured by a mortgage at the price of 103 per cent of the principal amount thereof, plus accrued interest to date of delivery.

To supplement its presently existing indenture of mortgage, dated Jan. 1, 1946, by a third supplemental indenture to be dated Sept. 1, 1954.

To use the proceeds from the sale of the preferred stock and bonds for financing additions and improvements to its telephone properties and to retire $400,000 of short-term bank notes, and the balance to reimburse its treasury for monies actually expended from income for construction purposes.

The commissioner ordered the Oregon-Washington company to file in his office, when executed, a true copy of the third supplemental indenture and executed copies of the purchase agreement covering the sale of the preferred stock and the $700,000 of bonds.

V V

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V V

"Attacks on free enterprise are seldom made in the open. They are generally camouflaged and made from the flank or the rear."—ROBERT E. LEE, member, Federal Communications Commission.

STATEMENT OF OWNERSHIP

Statement of the ownership, management, circulation, required by the Act of Congress of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233), of TELEPHONY, published weekly at Chicago, Ill., for October 1, 1954.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Telephony Publishing Corp., 608 S. Dearborn St., Chicago 5, Ill.; editor, Ralph C. Reno, 608 S. Dearborn St., Chicago 5, Ill.; managing editor, Dan S. Fargo, 608 S. Dearborn St., Chicago 5, Ill., and business manager, H. D. Fargo, Jr., 608 S. Dearborn St., Chicago 5, Ill.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as those of each individual member, must be given.)

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 9,499.

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Sworn to and subscribed before me this 29th day of September, 1954.
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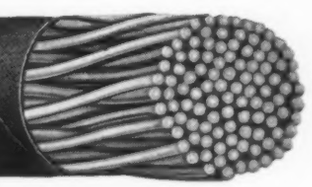

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